CLEAR CHOICE TEST

The Best Enterprise Ready Tablets PAGE 26

NETWORKWORLD

THE CONNECTED ENTERPRISE

MARCH 11, 2013

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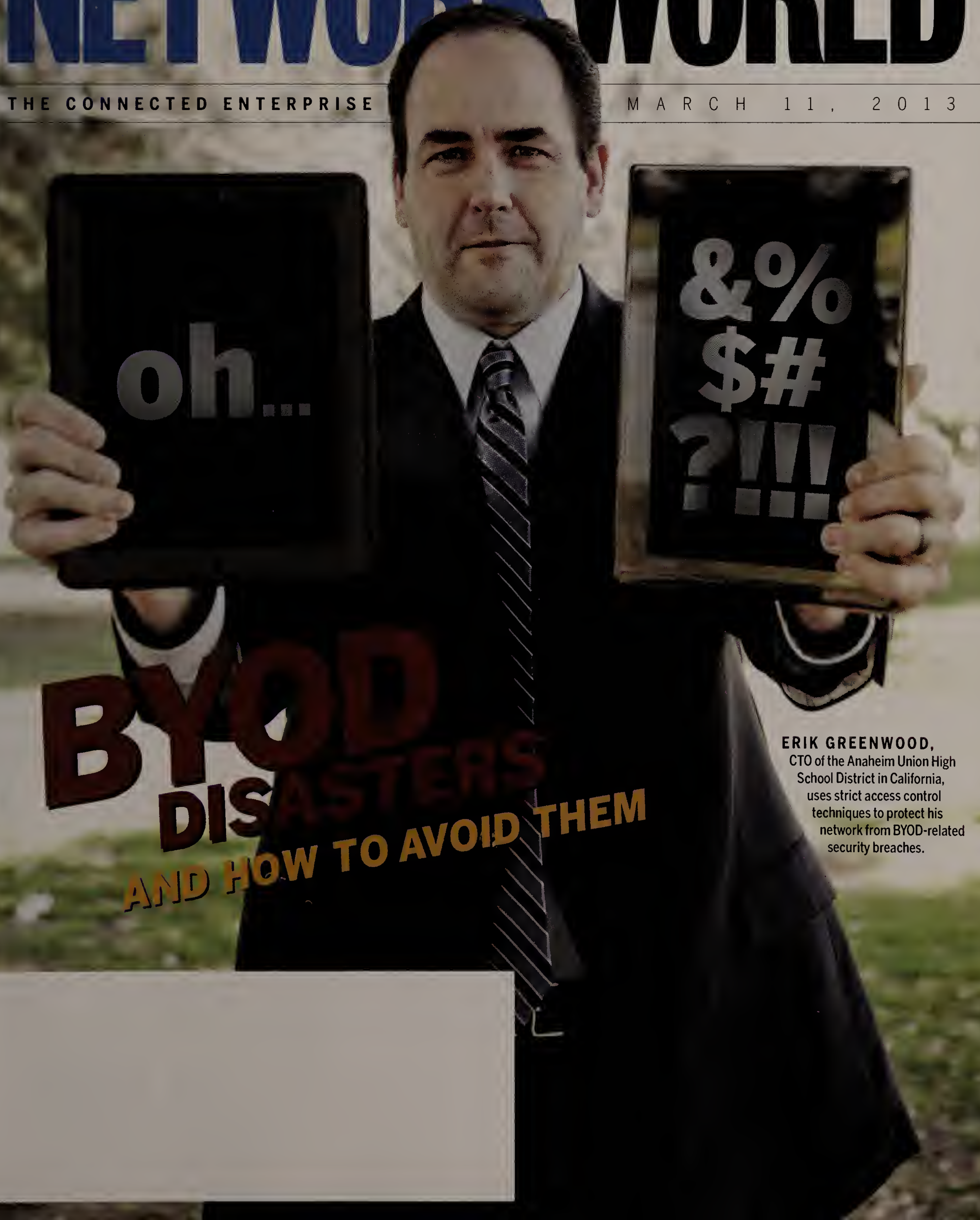

BYOD DISASTERS

AND HOW TO AVOID THEM

ERIK GREENWOOD, CTO of the Anaheim Union High School District in California, uses strict access control techniques to protect his network from BYOD-related security breaches.

MIDSIZE BUSINESSES ARE THE ENGINES OF A SMARTER PLANET

THERE'S A NEW EXHIBIT AT THE ZOO. IT'S CALLED ANALYTICS.

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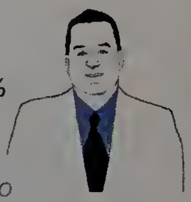
> ***"We forecast a 5% increase in food sales. Getting 30% was incredible."***
> — John Lucas,
> The Cincinnati Zoo



Attendance up 50,000 per year.

Food sales up 30%.

Concession revenue up 25%.

The Cincinnati Zoo, powered by analytics.

LET'S BUILD A SMARTER PLANET.

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FROM THE EDITOR | JOHN DIX

Is big data the security answer?

The recent RSA Conference in San Francisco was awash in talk of big data, but it was clear there was some disagreement about what people mean by big data and some outright skepticism about it being the answer.

Big data was a key theme in the opening keynote by Art Coviello, executive chairman of host company RSA (the security division of EMC), which announced a big data product in January. The new analytic tools are necessary, Coviello said, because of the scope of the challenge.

After all, organizations are swimming in security data. In a panel discussion at the show Ramin Safai, chief information security officer at Jefferies & Co., said his investment bank with 5,000 employees captures 25GB of security-related data every day. Buried in that they typically find 50 issues to examine more closely, two of which end up requiring real attention.

Do we need fancy new big data tools based on technologies like Hadoop to help contend with the deluge? Not necessarily, some speakers said. There are lots of ways to collect data and you can use tools like Splunk to correlate it, said David Hannigan, information security officer at Zappos, who participated in a CISO panel discussion.

But fellow panelist Stephen Moloney, manager of enterprise information security at Humana, is looking for more. He would like a big data tool to bring together information from disparate sources and give him the big picture. "Instead of a snapshot of the Grand Canyon, I want to see it from 30,000 feet."

Isn't that what security information and event management (SIEM) systems were supposed to do?

Session moderator Rick Holland, a senior analyst at Forrester, asked the audience of about 100 to raise their hands if they had deployed SIEM. About 60% of the group had. "How many consider their SIEM successful?" he asked. Only a few kept their hands up. "So, if we can't get small data right with SIEM, why do we think we can get big security data right?" Holland asked, to the laughter of the group.

Moloney, however, is still holding out hope for SIEM. "We're building out our SIEM and collecting all the data we can," he says. "We have a large security operations group that understands it very well. They're constantly retuning the sources to make it more valuable."

Hannigan agreed that tuning is critical, and that people are key. If they don't understand what they're seeing it isn't going to matter if your tool is based on small or big data.

COVER PHOTO: ELIZABETH WEINBERG

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peersay

Companies' decisions on telecommuting spur debate

SINCE BEGINNING TELECOMMUTING, I have received four merit raises, three key-contributor awards and a promotion. I collaborate with people on three continents. I've had the same boss for five years without meeting him face-to-face, yet I am held very accountable for my deliverables (Re: "Is Yahoo's telework ban shortsighted or savvy?" tinyurl.com/boo3ghs).

When I read about disengaged employees, inability to hold employees accountable and such, I see a failure to train employees and managers alike, as well as a lack of necessary collaboration tools.

panzrwagn

MANY PEOPLE THINK that by taking away the telecommuting option Yahoo CEO Marissa Mayer is trying to cull employees without having to resort to layoffs. The problem here is that she will be driving away the best and brightest who will easily secure a position elsewhere. She might as well just lay people off and keep the telecommuting option; that way she will get to keep some of the best at Yahoo.

Patty O'Furniture

I TELECOMMUTE. LET'S look at the time I save: one hour to get up and get ready; one hour to commute; 30 minutes getting coffee, listening to co-workers chat; 20 minutes to get to a place for lunch and back; one hour throughout the day of interruptions from people or phone calls.

The company gets: About 50 to 60 hours of steady work on projects per week; better code due to fewer interruptions; freed-up office space and a computer; the hours I would waste at work as listed above.

Carlis Burns

NONE OF US are in a position to decide if Yahoo's VPN logs alone are enough to make this decision. I would assume that someone with Mayer's background and knowledge is taking in all of the information before making this decision. I would also imagine that if everyone were getting their work done and doing well then this would not have been an issue. The fact of the matter is that Yahoo is struggling . . . big time (Re: "Yahoo CEO Mayer checked VPN logs before banning home working"; tinyurl.com/bdl6n2r).

Josh Jones

YOU DON'T NEED server logs to tell you if employees are completing their assignments. What server logs do tell you is how long employees spend on their assignments. If your employees aren't "connected long enough" but they are completing their assignments, that means they need more work. This is about controlling how employees complete their work, the mark of a poor manager.

Joe

IT'S A BALLSY move that I respect. The top 5% will work no matter where you make them do it, the bottom 10% will never work no matter what you do. This will be interesting to see what happens to the middle 85%. Maybe the attrition will be good for a company that needs to turn around fast.

Joel V

> The top 5% will work no matter where you make them do it, the bottom 10% will **never work no matter what.**

KUDOS TO BEST Buy for recognizing the need for change and making the hard decisions. I work in a corporate environment and have found that I'm less productive when I or others with whom I need to collaborate are working remotely. Nothing can replace face-to-face discussions for accelerating progress (Re: "Best Buy cancels telework program"; tinyurl.com/ajsmdhq).

Tom Leatham

THE BOTTOM LINE is companies are measured by the overall profit they generate. That is for the CEOs of the world to balance — and if Yahoo and Best Buy do not turn around, then the CEOs will be changed. I would like to see in six months their production levels after the decisions, as well as their profit. No one knows if this is a good decision until it is evaluated.

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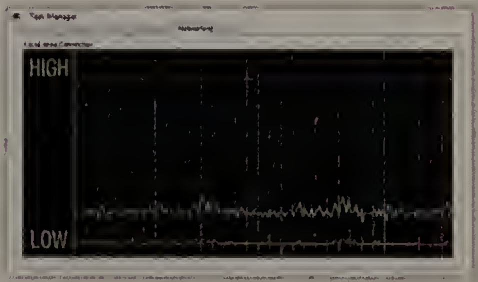

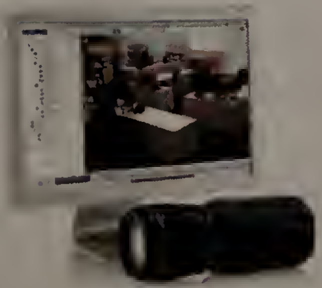

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bits

Unlocking petition gets Capitol Hill in gear

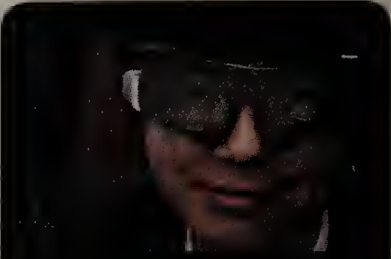
U.S. SEN. RON Wyden (D-Ore.) has proposed a bill that will allow consumers to legally unlock cellphones for use in other networks. "You bought it, you should be able to use it. My Wireless Device Independence Act ensures you can unlock your device," Wyden Tweeted last week. Wyden's proposed legislation comes after the Obama administration backed 114,000 petitioners who asked the Librarian of Congress to rescind an October decision to remove the unlocking of mobile phones from legal exceptions to the Digital Millennium Copyright Act (DMCA). Buyers of smartphones and tablets should be able to unlock their devices "without risking criminal or other penalties," R. David Edelman, White House senior adviser for Internet, innovation and privacy, wrote in response to the petition. Other lawmakers have also come out in support of changes to the law to make it easier for users to unlock their phones. ***tinyurl.com/cnerfmm***

GM drives shift to in-house IT

GENERAL MOTORS is hiring 1,000 IT staff for a center in a suburb of Phoenix as part of its strategy to move more high-value IT work in-house. The new center will join three others GM has set up in Austin, Texas, Roswell, Ga., and Warren, Mich. The locations were chosen based on the availability of local talent, says the company, which plans to hire more than 4,000 IT staff at the four centers over the next three to five years. Back in October, GM announced that 3,000 employees from HP who were already working on GM's business would move to its employment rolls as part of its transition from an outsourced model to a mainly in-house model for IT services. ***tinyurl.com/b6mtk2d***

Wanted: IT security pros

DEMAND FOR information security experts in the U.S. grew 3.5 times faster than demand for other IT jobs over the past five years, according to a report from Burning Glass Technologies. In 2012, there were more than 67,400 separate job postings for cybersecurity-related jobs in a range of industries, including defense, financial services, retail, healthcare and professional services. The 2012 total is 73% higher than the number of security jobs posted in 2007. By comparison, the number of job postings for all computer jobs grew by about 20% between 2007 and 2012. The growing demand translates into better pay: The average advertised salary for cybersecurity jobs in 2012 was $100,733 vs. $89,205 for all computer jobs, Burning Glass said. ***tinyurl.com/alhdqks***



IT VIDEO

Trade show season in full swing

Catch up on the latest announcement from two international technology shows - videos offer up news from CeBIT 2013 and Mobile World Congress, showcasing the latest in mobile hardware and apps. ***tinyurl.com/bsanvvy***

Mellanox opens up to fight rivals

IN AN effort to better compete with data center rivals Cisco, Arista and Juniper, Mellanox is opening up. The Infiniband-turned-Ethernet switching company is proposing an "Open Ethernet" strategy that extends open source to the data center infrastructure — not only in operating systems, but also in Layer 2 switching, Layer 3 routing, software-defined networking, network management and applications. For SDNs, Mellanox is supporting OpenFlow, the popular protocol and API for SDN controller-to-switch interaction. For Layer 3 routing, Mellanox is adopting Quagga, an open source routing software suite. Open source-based Layer 2 switching and network management capabilities are now being evaluated, says Gilad Shainer, Mellanox vice president of market development. ***tinyurl.com/cobdmab***

Free Azure tool designed to cut cloud costs

A NEW free tool called MetricsHub is designed to cut the cost of Microsoft's Azure services by automatically adjusting cloud

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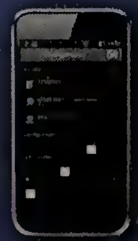

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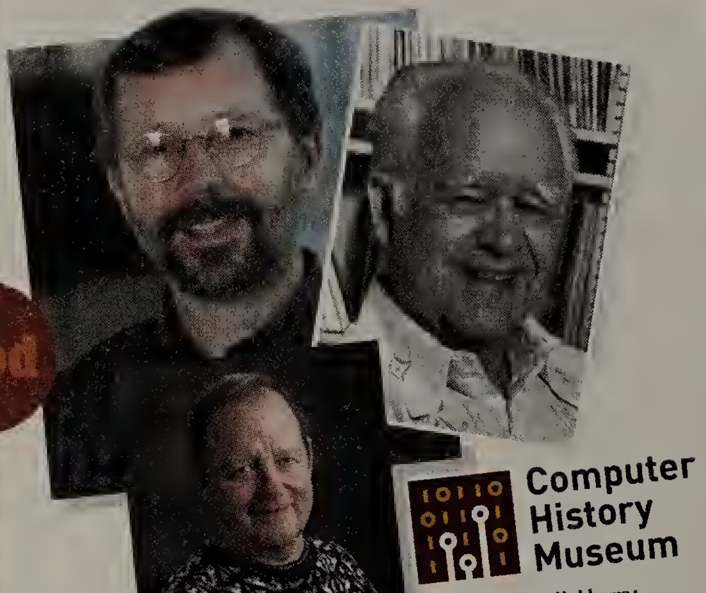
GOOD **BAD** **UGLY**

good



Ed Catmull, Harry Huskey and Robert W. Taylor

Computer History Museum to induct 3

THE COMPUTER History Museum in Mountain View, Calif., has revealed three new inductees for its Hall of Fellows this year: Ed Catmull, a computer scientist and Pixar co-founder, along with two PC pioneers: Harry Huskey (created the G15, called by some the first PC) and Robert W. Taylor (a leader at ARPA and Xerox PARC). These aren't overly familiar tech names, such as earlier Hall inductees Linus Torvalds and Steve Wozniak, but they have all been greatly influential in advancing computer technology and networking.

bad

H-1B visa abuse

A TEXAS IT services firm has been indicted by federal authorities for using H-1B visa workers to create an inexpensive "as needed" labor force. A multi-count indictment filed last month charged that Dibon Solutions of Carrollton, Texas only paid Visa-holding employees when there was work. The indictment says that Dibon recruited foreign workers and sponsored them for H-1B visas to work at the firm's headquarters, but required them to provide consulting services to third-party companies located elsewhere. (via Computerworld)

ugly

Grizzly Apple Store robbery

VANCOUVER POLICE are investigating a brazen robbery at an Apple Store last week in which three male suspects allegedly sprayed 40 people with a chemical mix designed to ward off bears as they swiped an undetermined amount of Apple laptops, iPads and iPods. According to the National Post in Canada, police were still looking for the suspects, who fled by car and dumped some of the items they swiped before doing so.

resources to fit demand. Microsoft bought the company and is making its software available as part of Azure services. The MetricsHub service works by gathering data about a customer's cloud resources from one of two sources: Windows Azure diagnostics or via a MetricsHub agent within the customer's Azure infrastructure. MetricsHub analyzes the data; adds or drops application instances to meet actual demand; and produces a report that breaks down Azure bills. MetricsHub can also be used as a performance-monitoring platform. ***tinyurl.com/a6wlxyy***

Microsoft caves to Office 2013 licensing backlash

MICROSOFT'S LATEST update to its Office 2013 retail licensing agreement should force customers to put away their torches and pitchforks. Effective immediately, customers who purchase a retail copy of Office 2013 (the $140 Home & Student, $220 Home & Business or $400 Professional editions) can move the software to another computer once every 90 days. A few weeks ago, Microsoft said Office 2013 licensing was non-transferrable — which caused a customer uproar. Now, an Office 2013 license grants the buyer the right to install the software on a single PC — but if that PC breaks, or gets lost or stolen, or if a buyer upgrades and replaces it with a new one, the buyer can install Office 2013 on the new PC. A buyer can also sell or transfer the license to another user. ***tinyurl.com/b3kzywz***

First Yahoo, now Best Buy bans telework

IS TELECOMMUTING the new scapegoat for poor performance? Best Buy, in the midst of a corporate restructuring, has canceled its flexible work program and expects corporate employees to put in traditional 40-hour work weeks at the retailer's headquarters (they used to be able to work whenever and wherever they wanted). Last week's announcement comes on the heels of Yahoo CEO Marissa Mayer's decision to end telecommuting, which ignited a firestorm of criticism. It also follows news of Best Buy cutting 400 corporate workers as part of a plan to trim $725 million in expenses and restructuring its business. ***tinyurl.com/ajsmdhq***

PARITY BITS

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SOURCE: NY TIMES

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[1] Based on IBM testing and documented in IBM System x® Virtualization Server Consolidation sizing methodology. IBM Flex System x240 supports 2.7X more Peak Utilization Virtual Machines (VMs) than previous generation BladeCenter® HS22V.

[2] Based on IDC white paper "The Economics of Virtualization: Moving Toward an Application-Based Cost Model," Michelle Bailey, November 2009, http://www.vmware.com/files/pdf/Virtualization-application-based-cost-model-WP-EN.pdf
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BLACKBERRY ENTERPRISE SERVICE 10

Can BES 10 save BlackBerry?

Powerful MDM tool could give BlackBerry a much-needed lift

BY MIKE HECK

CLEAR CHOICE TEST

Research in Motion (RIM) is now BlackBerry, and the renamed company recently launched the BlackBerry 10 OS. While much attention was focused on phones running the new OS, we decided to take a closer look at the company's new management platform, BlackBerry Enterprise Service 10 (BES 10), which unites mobile device management (MDM), security, unified communications and application management.

BES 10 is required for managing BlackBerry 10 devices. BES 10, BlackBerry Device Service (for managing PlayBooks and BlackBerry 10 smartphones) and the Universal Device Service (to handle iOS and Android devices) can all run on the same server, whether it's physical or virtual.

For now, enterprises will need to maintain separate physical servers running BlackBerry Enterprise Server 5.x to manage BlackBerry OS 7 and earlier devices. But a May service pack will permit BES 5.03 and above to run on the same physical or virtual server as BES 10.

We installed BES 10 on a Microsoft Windows Server 2008 R2 running SQL Server 2008. The step-by-step setup application should be familiar to BlackBerry administrators; it required about three hours to load and configure all modules. Once finished, I had the BlackBerry Device Service, Universal Device Service and BlackBerry Management Studio ready for adding users and devices.

The BlackBerry Device Service admin console mirrors the layout of past BlackBerry Enterprise Server software, so only brief refresher training should be needed. IT staff have a full range of options to create and manage users, groups and security policies.

Work/life balance

My testing included a new capability to establish application spaces on devices as part of the provisioning process. This works using BlackBerry Balance technology, one of the most significant additions to BlackBerry 10 OS.

The Administration Service helped me create a work space (domain) and personal space on BlackBerry 10 devices. For example, I specified that the work space contain mandatory internal apps and certain public apps from BlackBerry World. I also pushed a list of recommended apps to users that were included in my corporate app storefront (BlackBerry World for Work).

In addition, I also made some public apps available in the personal space, yet allowed them to be configured separately.

To streamline workflow, BlackBerry Device Service now allows users self-service activation of multiple devices — and they can select whether it replaces an existing BlackBerry device or is an additional device. Moreover, device activation is simplified — users no longer have to enter an ID code or server address. For flexibility, activation is done over a wireless network or using the Web Desktop Manager with the device connected to a computer.

The Universal Device Service lets your IT staff manage iOS and Android devices. I employed drag-and-drop functionality to assign groups, IT policies, software configurations and profile to user accounts with these non-BlackBerry handsets.

Specifically, I controlled Wi-Fi profiles and certificate profiles for iOS and Android devices — and VPN profiles and email profiles for iOS devices. Further, you can provision and manage work applications on these devices. Other capabilities let me view the device inventory for my test organization and use Microsoft ActiveSync gatekeeping to block unauthorized devices from configuring Microsoft ActiveSync to connect to my infrastructure and access work email.

What you can't currently do with iOS and Android devices, however, is deploy BlackBerry Balance. That's only possible with BlackBerry 10 OS phones and tablets.

BlackBerry Management Studio provides a simplified way to perform many common tasks. From the Web console, we viewed the devices assigned to a user and clearly saw the administrative tasks we could perform for each device. Further, I assigned user accounts to groups based on common criteria, including user location or device model. Conveniently, Management Studio links to the associated administration console so you can quickly perform more advanced tasks.

Is BlackBerry Enterprise Service 10 enough?

Beyond integrating multiple device management products to reduce the work of technical staff, BlackBerry is also letting customers trade up their existing BlackBerry Enterprise Server licenses on a one-for-one basis for free, through Dec. 31. However, organizations still need to pay the per-device perpetual license — $90 each in volume — and BlackBerry charges separately for support and consulting services.

So, is this enough to keep BlackBerry in the game? I believe BlackBerry Enterprise Service 10 demonstrates that BlackBerry hasn't lost its edge in security and other aspects of device management. Moreover, BES 10 has already received FIPS 140-2 certification; this computer security standard allows BES 10 to be used by U.S. government agencies. The U.S. Immigration and Customs Enforcement announced it would pilot BES early this year.

But for BlackBerry to become truly relevant again, it must stop the defection of individual purchasers as they embrace iOS and Android devices. BB 10 OS and the BlackBerry Z10 phone have generated positive interest and sales. The hardware available now doesn't leapfrog anything from Apple, Nokia or Samsung — but it's solid and complete at launch.

There are tons of MDM competitors. The advantage BlackBerry holds is that it's established in many enterprises and has embraced the BYOD strategy for a while. BlackBerry Enterprise Service 10 manages BB 10, iOS and Android devices with aplomb — and provides some fairly unique features with work and personal workspaces.

I don't believe an organization would build its MDM infrastructure fresh with BES 10. But that would be a rare case, since most already have BES handling their existing BlackBerry users. For the majority of institutions, BES 10 is a very good reason to bring in BB 10 devices while also accommodating Apple and Android users — all in an easily managed and secure environment.

As such, don't count BlackBerry out yet. ■

Heck manages portals for a large pharma company and writes about enterprise applications. He can be reached at mikeheck@comcast.net.

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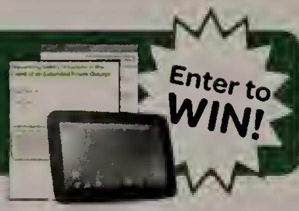

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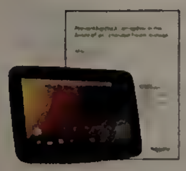

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Arista is out in front of the SDN craze

Today, the buzz in networking is all around software-defined networks — and nothing could make Arista Networks CEO Jayshree Ullal happier. Ullal spent 15 years at Cisco, where she ran the network giant's core switching and data center businesses, before joining Arista, which was founded by Sun co-founder and Chief System Architect Andy Bechtolsheim and David Cheriton, a Stanford University professor of computer science and electrical engineering (and fellow Cisco alumnus). Ullal says Arista's data center switches were born to support SDN and provide both the power and flexibility required for today's highly virtualized corporate and cloud data centers. In this installment of the IDG Enterprise CEO Interview Series, Ullal spoke with Chief Content Officer John Gallant about the reality and hype around SDN, and why the data center requires a different network than your father's general-purpose Cisco net. She also explored how her work at Cisco shaped Arista's strategy, and shared insights on how Arista's partnerships with VMware and Cloudera are making it easier to move to cloud and embrace big data, respectively.

Why should someone buy from Arista?

Arista saw three disruptions in the market: a hardware disruption; a software disruption; and a customer buying disruption, which in my mind is the most important thing. You can invent all you want on the technology side, but you have to see the customers changing their market position.

The hardware technology disruption was that in the 1990s, the only way to build any kind of high-speed networking was through your own in-house ASICs and specialty chips. That's not true anymore. We have from three to five vendors available, whether it's Intel, Broadcom or others, supplying us much of the silicon. They are sometimes an order of magnitude better in power, footprint, density, latency, and performance and scale. Arista was able to take advantage of that disruption in hardware.

The second is software. We were very inspired by Cisco's software focus on the enterprise side, Juniper's on the service provider side, and we saw that we could build a purpose-built, modern operating system only for the data center and the cloud. We didn't try to do it for general-purpose networking. We really focused on our mission, which is high-performance applications for the data center and cloud. It's called Extensible Operating System (EOS) and there is no networking operating system that is as modern, self-healing and resilient, and [designed for the cloud].

And the third is the cloud itself. The enterprise market is shifting. Every CIO is being demanded a strategy on what they are doing with the cloud in terms of applications and infrastructure. Whether it's a private cloud, a public cloud or a hybrid cloud, these are becoming an important piece of the strategy. As Amazon innovated on the application side, you can think of Arista as providing that market disruption on the networking side.

What were you setting out to do to support or enable cloud?

More and more people are outsourcing to modern applications — whether it's Salesforce.com or Amazon itself. [They're supporting] high-performance computing, or high-frequency trading or, increasingly now, big data and network virtualization. The network infrastructure needs to adapt. It cannot be so monolithic. It cannot be one physical port equals one VLAN equals one network switch. It really needs to be much more massive in scale. A typical enterprise network is a 10,000-node, three-tier network, and we were able to build a much flatter, fatter topology at Layer 2 and 3, using what we call the leaf-spine architecture that can scale to 50,000 to 100,000 nodes. That was our first premise.

The second [thing we focused on] was application delays. Don't build a network as a cost center, but really build it as a profit center by addressing the applications themselves. We early on entered the high-frequency trading market to understand their trading algorithms, map it to the latency requirements. That became an instance of a high-performance financial cloud where they started building the network for that application separate from the enterprise network.

In Silicon Valley, a large number of Web 2.0 providers, whether they're search engines or social networking, the kind of scale they build is just unbelievable. It's 100,000 nodes, and increasingly, one machine, one physical server, is not one node. That's 20 virtual machines, which means you could be enabling 100,000 physical nodes but you are really enabling 1 million virtual nodes. There's huge virtual machine sprawl and physical sprawl. The CPU wasn't being fully utilized. But now, with the new multi-core CPUs, the pressure is back on the network. That's why whether it's a private or a public cloud, the Web 2.0 companies are moving massively to high-density 10G, 40G and 100G [networks] that are requiring a new type of architecture and new software as well.

What's real and what's false about SDN?
If you ask 10 people what SDN means they'll give you 10 different answers. But if I had to describe it in one or two words, I would say: open and programmable. There's been so much vendor lock-up in networking, with the huge operational cost of being locked in with one vendor. That mainframe model in networking is what SDN is challenging. Why is SDN fever and hype so high? People are sick and tired of the vendor lock-in and proprietariness and they are looking for a movement. Now, how and when will that movement happen? Like anything, you have to be pragmatic about that. When the hype is so high the market isn't that big, right? But in my view, SDN has a tremendous opportunity to succeed if we're pragmatic about the use cases. Is SDN OpenFlow? No, it's not just OpenFlow. Is it OpenStack? No, it's not just OpenStack. Is it VXLAN or network virtualization? Understanding what you can actually do with SDN is the key here.

Let's talk about that programmability aspect. When I talk to people in the market, there are some who are really excited about that piece, but others who think there are only a limited number of things you would ever want to program the network to do. What do you envision people programming the network to do?
I think they're both right for different reasons. In a traditional network, no one is looking to toss their IP out any time soon, so whatever you do you've got to make sure your IP network is up and running. But say you're going to do a green field [installation]. This is how the OpenFlow SDN movement got started at Stanford. [Professor] Nick McKeown was doing this project called Clean Slate, where he was telling his students: "Imagine a world with no IP. How would we define it?" That's all great for vision and strategy, but we've got hundred of thousands of customers operating networks, so you have to understand that no matter how inflexible and how much of a headache your current architecture may be, TCP/IP does work. Then you look at the model that SDN is coming up with, which I call the controller, overlay controller model. That's a controller for OpenStack, OpenFlow, network virtualization, each of them is a use case -- it's a specific case where you need programmability. I agree that you shouldn't go and mess with the big IP network. If it's not broken, don't fix it.

Understand what are the use cases you're trying to augment with programmability. I can think of three or four use cases. One of the ones that we found, especially with OpenFlow, but also in IP networking, is data tap aggregation. When you're running at the 10G speeds we are, everybody is looking for traffic visibility and understanding what's going on in the network. You can build an out-of-band controller with OpenFlow, whether it's Big Switch Networks or open source controllers from Floodlight or NEC, and have an OpenFlow agent on our switches, and have a very simple SDN network that's highly programmable, and still works in hybrid mode with your IP network. That could be one case. There's the Nicera case, which is also, in my view, a programmable use case, but it's for strictly network virtualization. You keep the IP running, but you need a network virtualization platform that can program your virtual switches, whether they're VMware switches or open virtual switches from an OpenStack environment. Today, this is literally like two islands; there's the physical switch and the virtual switch. With Arista working closely with VMware and Nicera, we can transcend the virtual-to-physical islands, where every VXLAN vSwitch port automatically maps to a hardware port. Now you've got network virtualization not as two separate failure domains, but transcending virtual-to-physical, potentially even to a cloud, architecture down the road. This is in a VMware environment, but there's no reason you couldn't do it in an OpenStack environment with quantum plug-ins as well. So that's another use case.

Do you believe SDN fundamentally changes the competitive landscape?
Yes, but I believe the controller vendors in isolation won't succeed. The networking vendors, if they get defensive with just IP won't succeed. You have to have the Arista view, which is have two personalities. Work in a controller mode, but work also with your IP network. That's the mistake I think SDN is making, in that they're thinking of it as only green field. In reality there's a whole world of IP there that you need to work with while you're trying to develop the use cases.

Server virtualization was essentially owned by VMware and the software vendors, not the server vendors. Who ends up owning SDN?
[The server vendors] got defensive. If the networking vendors do not embrace it because it requires a new software paradigm that they haven't built, then they stand to lose, because over time there will be more and more use cases that disrupt them. Customers like that. I was talking to a customer today who said: "The most liberating feeling for me now is I can be multi-vendor, and it hasn't cost me that much money. I don't know if there are that many SDN use cases, but I love it." Arista feels very fortunate that we got an eight-year head start. We spent four years building the software, four years commercializing it, and now we're sitting in the middle of an SDN momentum and a switch momentum that puts us on the natural cusp, if you will, where we can be working with the old and still developing the new.

Does Arista have its own controller?
No.

Is that something you're going to have?
Our control plane and data plane will be open, and we will work with all the controller vendors that you deploy. HP Opsware, vSphere VMware, Nicera, Big Switch, Floodlight, NEC, IBM Tivoli, EMC Smarts. These are all to us controllers. We don't view ourselves as the management expert. Now, if you want to go develop specific use cases for a controller on our switch, we can do that too. And people do that. Like for example, we worked with Splunk very closely to develop a configuration management tool with them.

If you're a CIO or a senior IT executive, and you are on the sidelines looking at SDN and wondering what it's all about, what's the 30-second answer on why they should care about it and start thinking about it now?
Because it unshackles their traditional networking decisions from their application and helps them develop new use cases that they couldn't do before, or only had to do with traditional vendors. The key for them is to understand what problem they are trying to solve. Solve that out-of-band and work with the existing [network].

What's ahead for Arista in 2013?
Expect to see more capacity, more software, more of everything, and the replacement of our older products. Second, expect us to continue to be application focused, because that's where we think we get appreciated. If it's a straight, traditional network, where nobody gets fired for buying IBM or Cisco, that's not where Arista shines. Arista will continue to provide thought leadership, like we did with high-frequency trading, and like we do now with big data and network virtualization. We're very excited when we think of the number of things we have to do in the software and application world, and prioritizing them, there's so much ahead of us. ■

➔ Read the rest of this interview online. ***tinyurl.com/dye2duu***

Who owns that Twitter account?

Social networking accounts raise all sorts of legal questions

BY ZACH MINERS, IDG NEWS SERVICE

NOAH KRAVITZ built up quite a following at PhoneDog, a mobile-phone news and reviews website. By late 2010 his @PhoneDog_Noah Twitter account had amassed more than 17,000 followers. That was all well and good, until Kravitz resigned and went to work for a competitor.

Kravitz took his followers with him, changing the name on his account to @noahkravitz. And that's when PhoneDog, which was unwilling to let 17,000 fans go that easily, filed a lawsuit against him.

The question of who owns an employee's social networking account when it's used for work-related posts is a legal gray area, as more companies are discovering when they wind up in court trying to keep readers, business contacts and other social connections within the fold.

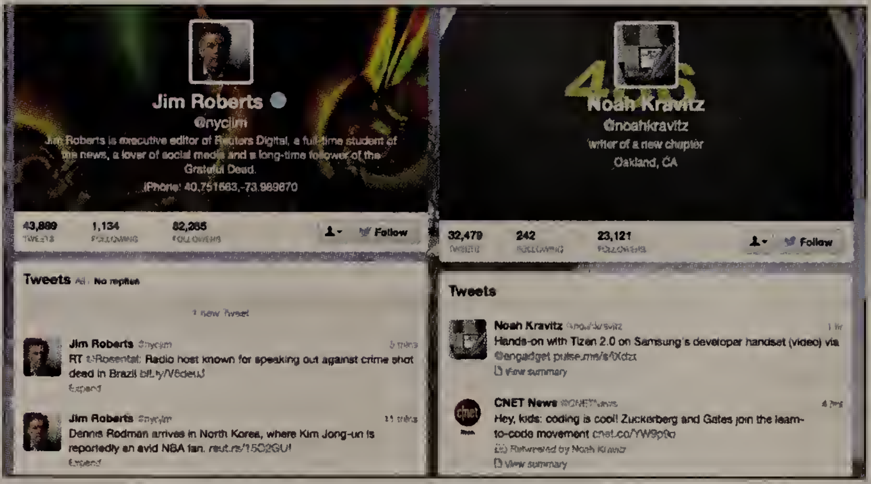
"Social media law is a developing area," says Cary Kletter, a partner with Kletter Law Firm who represented Kravitz in the PhoneDog case. And because the legal basis for claiming ownership of social media accounts is not clear, litigation is a common course of action when disputes arise.

PhoneDog's lawsuit alleged misappropriation of trade secrets, arguing that the password for the Twitter account constituted confidential information that allowed Kravitz's new employer to unfairly compete against PhoneDog. The case played out between 2011 and 2012 in a California federal court and was eventually settled under undisclosed terms. But Kravitz got to keep the account, which now has more than 23,000 followers.

Two other cases gained attention last year for pitting employers against employees over social media ownership. In one, Jill Maremont sued her then-employer, Chicago-based Susan Fredman Design Group, after it posted messages to her Twitter account while she was in a hospital recovering from a car accident.

Maremont had used the account to promote company business, and her employer knew her password. Her lawsuit accuses the company of impersonating her for commercial purposes without her permission. That case is ongoing.

In the other case, Linda Eagle, co-founder of a banking education services firm in Pennsylvania, was fired after the company was acquired in 2010, court records show. Eagle had created a LinkedIn account while she was president of the company, and after her termination she found the account had been taken over and put in the name of the company's new CEO, Sandi Morgan.



Jim Roberts
@nycjim
Jim Roberts is executive editor of Reuters Digital, a full-time student of the news, a lover of social media and a long-time follower of the Grateful Dead.
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RT @Rosental: Radio host known for speaking out against crime shot dead in Brazil bit.ly/V6deuJ

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Dennis Rodman arrives in North Korea, where Kim Jong-un is reportedly an avid NBA fan. reut.rs/15O2GUI

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@noahkravitz
writer of a new chapter
Oakland, CA

32,479 | 242 | 23,121

Tweets

Noah Kravitz
Hands-on with Tizen 2.0 on Samsung's developer handset (video) via @engadget pulse.me/s/fXdzx

CNET News
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The question of who owns an employee's social networking account when it's used for work-related posts is a legal gray area.

People searching for Eagle on LinkedIn were now routed to a page with Morgan's name and photograph — but which still showed Eagle's honors, awards, recommendations and connections, according to the lawsuit she subsequently filed. That case is also pending.

The Maremont and Eagle cases, and others like them, are difficult to decide because there's little legal guidance today about who owns an employee's Twitter, Facebook or LinkedIn account and their associated contacts when the account is used for work.

"Many employers today don't give much thought to post-employment ownership of, say, Twitter followers," said attorney Jennifer Archie, a privacy and data security specialist with Latham & Watkins, who has counseled dozens of employers about workplace policies and employee agreements related to social media.

Some, like Kletter, argue that because Twitter followers are typically real people who can be seen by anyone clicking on a person's followers link, and who follow and un-follow accounts as they please, the legal basis for claiming ownership of them is questionable.

In cases where a social media account was created as a personal one before the employee joined the company, and then used for both personal and work purposes, it's likely even harder for an employer to claim ownership, Kletter says.

Determining what makes an account personal vs. professional is tricky in an age of near-constant social networking, says Archie of Latham & Watkins.

"People's professional work often bleeds over into their personal time thanks to the interconnectedness of mobile devices, and that's only one way ownership disputes can arise," Archie says.

Facebook and LinkedIn each said via email that their official stance is that users own their accounts. Twitter's terms of service say its users own all the content they post to its site.

Because the dividing line between personal and professional is so blurry and varies with the job, the best way for employers to avoid legal disputes is to craft clear policies about how employees should use social media, and what happens to an account when an employee leaves the company.

The policy should at the very least make clear whether the company or the employee will own job-related social media accounts, says John Delaney, a partner with the law firm Morrison & Foerster.

If a company wants to claim ownership of a social media account, ideally it will keep the employee's name out of the account name, and instead reference the company's name or its brands, he says. And if a company owns an account, it should be used exclusively for business.

"If a company is going to encourage its employees to use their own personal social media accounts for work-related posts and tweets, the company should not expect to obtain ownership over such accounts as a result," Delaney says.

Even when the account is personally owned, there are still legal gray areas when it is used, even if only in part, for that person's work or business.

"Even though the existing practice of the overwhelming majority of employers recognizes employee privacy rights with respect to private, password-protected social media accounts, we recommend that employers undertake a careful review of their social media policies and practices," said Latham & Watkins attorneys Linda Inscoe and Joseph Farrell. ■

Can your cloud provider get evidence you need?

What to expect in the emerging world of cloud forensics

BY ELLEN MESSMER

ANY BUSINESS that anticipates using cloud-based services should be asking the question: What can my cloud provider do for me in terms of providing digital forensics data in the event of any legal dispute, civil or criminal case, cyberattack or data breach?

It's going to be different for every provider, according to the industry insiders and legal experts who discussed this topic during a panel session at the recent RSA Conference. And complicating cloud-based forensics is that the high-tech industry is still scratching its collective head over basic requirements, some of which are being pounded out now in the Cloud Forensics Working Group at the National Institute of Standards and Technology (NIST).

"CLOUD PROVIDERS WANT LAW ENFORCEMENT TO DO IT THEMSELVES."

said **JOSIAH DYKSTRA,** noting Amazon, for instance, has no incentive to expand cloud forensics capabilities unless it's possible to make money from it.

"In cloud, we're still struggling with definitions," said Steven Teppler, partner at the Sarasota, Fla.-based law firm Kirk-Pinkerton PA in its information governance and electronic discovery practice. "This causes problems for attorneys. We may not get answers that are complete because we don't know what to ask."

Teppler, who spoke on the panel, said the focus for any lawyer is on obtaining cloud forensics evidence which will lay a foundation for admissibility under the law that a jury can weigh, based on the "provenance" of the information — the who, what and where of the data. He also noted the process known as "legal discovery" to collect information in any dispute is always constrained by time and expense.

The reality is that "anyone can be sued," said Teppler, and if served with a complaint, it may be necessary to speak with your cloud provider to ensure that information can be preserved "in a consumable fashion" that can be used by the opposing party. This adds up to the need to make a "good-faith effort" that has IT people speaking with corporate lawyers to make forensics-based information available.

The world today is populated with "lots of little clouds," noted Christopher Day, chief security architect and senior vice president of secure information services at Verizon Terremark, speaking on the panel. These can be roughly construed as infrastructure as a service (IaaS), platform as a service (PaaS) and software as a service (SaaS) vendors.

Day said Terremark uses an IaaS cloud based on VMware virtual machines. In the event that Terremark got served a warrant by law enforcement, the company has procedures in place to "get them the image they want," Day said. "We have to show we haven't messed up the image."

Terremark would know if a virtual machine "suddenly disappeared" because it's tracked as part of the billing process, said Day. He added that Terremark would always tell the customer if the cloud provider got a subpoena related to them unless law enforcement asked Terremark not to share that information.

Josiah Dykstra, a doctoral candidate about to graduate from the University of Maryland, Baltimore County, who has made cloud forensics a focus of his study, spoke on the panel about what he's finding out in his research.

"Big providers can't keep pace with the number of cases they get," Dykstra said. There's little that's "built in" today to help cloud providers in a multi-tenant environment through processes such as obtaining firewall logs to deliver to law enforcement or attorneys asking for them. "Cloud providers want law enforcement to do it themselves," said Dykstra, noting Amazon, for instance, has no incentive to expand cloud forensics capabilities unless it's possible to make money from it.

Eric Hibbard, CTO, security and privacy, at Hitachi Data Systems, agreed that cloud providers "really don't want to get into this" and a deep level of cloud forensics remains somewhat unusual. He acknowledged cloud providers would rather hide behind explanations such as "we don't keep that, we don't do that."

If a judge orders that certain evidence be obtained, and it happens to be in a cloud service, the court may hold a hearing with witnesses from both sides arguing how easy it is to obtain it, Hibbard pointed out. And if a virtual-machine image is provided, it may lead to more questions, such as is the email trail missing.

And if there is some suspicion that a cloud provider was hacked, perhaps due to some vulnerability, recourse is probably going to be difficult in terms of getting digital forensics.

"It's a 'best effort' and all that," said Day, noting that "individual cloud [virtual machines] get popped all the time." There have been known to be exploits in which a compromised virtual machine could allow the attacker to get access to the underlying hypervisor. There's a lot of concern about memory and traffic but "you may not know how the intruder got in" and the forensics on it can be "dodgy," he acknowledged. But Terremark can do preservation of virtual machines through network storage. Some customers — mostly government agencies — are very concerned about what data might remain on drives and put specifications in contracts to be informed that drives are securely destroyed.

When asked if a criminal who knows a subpoena is coming might in theory be able to completely wipe his own traces, Day said, "Not directly." But what cloud-service providers do to try and preserve digital evidence varies widely across the industry, according to Dykstra. In the end, some take drives and shred them and some may throw them away in dumpsters.

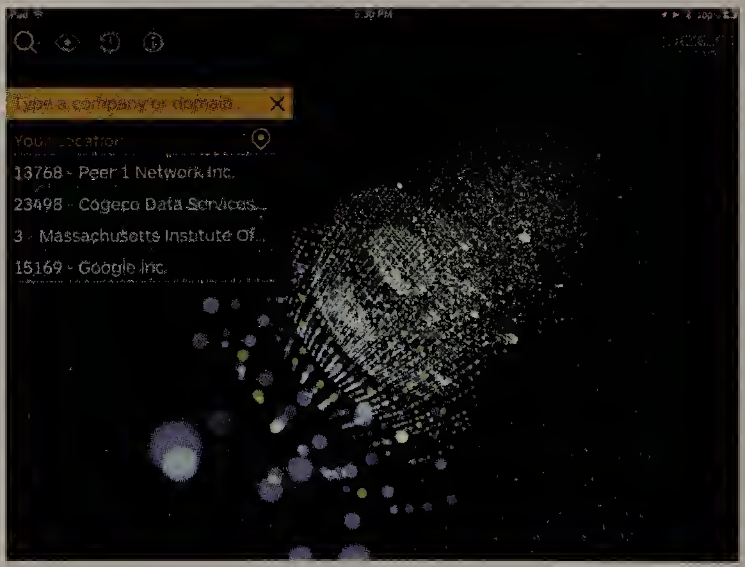
Encryption plays a dual role in a cloud service. It can make data more secure for the customer but harder for law enforcement to get if the cloud service provider doesn't require the customer to provide an encryption key for it. Sometimes law enforcement will attempt to decrypt by brute force, and other times law enforcement has been smart enough to ask for data residing in memory, said Day. ■

TOOLS

Peer 1 maps the 'Net on iOS and Android

Mark Gibbs' Gearhead

When you're talking to n00bs — say, your CEO or VP of sales and marketing (or maybe even your CIO) — it can be hard to get them to understand just how big and complex the Internet is. Sure, they hear about the billions of people on the 'Net and all of the companies making money through e-commerce of one kind or another (which hopefully includes yours), but what they will often have a problem grasping is the sheer scale of the Internet and how it's grown. What they need is a visual aid.



Type a company or domain
Your location
13768 - Peer 1 Network Inc.
23498 - Cogeco Data Services...
3 - Massachusetts Institute Of...
15169 - Google Inc.

The Peer 1 "Map of the Internet" iOS app in Network view with the search feature displayed.

So what can you show the n00bs to clue them in? Try a new free app for iOS (iPad and iPhone) (tinyurl.com/alop4h2) and Android (tinyurl.com/amyg36d) called "Map of the Internet," published just last week by Peer 1 Hosting.

A couple of years ago Peer 1 published a great infographic depicting a map of the Internet which was greeted with considerable enthusiasm and is still available online as a zoomable image, desktop wallpaper and a PDF. This map, dated Jan. 2, 2011, shows "19,869 autonomous system nodes, joined by 44,344 connections" (autonomous systems are networks under a single administrative control).

The data for the map came from the Cooperative Association for Internet Data Analysis (CAIDA), "a collaborative undertaking among organizations in the commercial, government, and research sectors aimed at promoting greater cooperation in the engineering and maintenance of a robust, scalable global Internet infrastructure."

CAIDA makes the various datasets it collects about Internet connections and topology available for free. The actual dataset used by Peer 1 was the IPv4 Routed /24 AS Links Dataset.

The map was visually impressive and Peer 1 explained how it was created: "The sizing and layout of the autonomous systems [the nodes of the map] are based on their eigenvector centrality, which is a measure of how central to the network each autonomous system is: an autonomous system is central if it is connected to other autonomous systems that are central. This is the same graph-theoretical concept that forms the basis of Google's PageRank algorithm." Good to know.

Well, neither time nor the Internet stand still, and as groovy as the original static Peer 1 map was, the Internet carried on evolving even more rapidly. So to really bring the evolution and status of the 'Net to life, software was needed, and thus the Peer 1 iOS and Android "Map of the Internet" apps were created.

Now, while the new Peer 1 apps don't give a realtime view of the Internet, they are accurate to within the last few months and will be updated. Using the timeline view you can examine any single year from 1994 through to 2020.

The current version uses simulated data from 1994 to 2000 (the data collected prior to 2000 wasn't as detailed or accurate as it became in later years) along with comprehensive data from 2000 through late 2012 and extrapolated data for 2013 to 2020.

The new apps display the CAIDA data in either a globe view that geolocates the ASes or as a network view that organizes the ASes according to how they are connected hierarchically. You can also use the timeline option to show the ASes that existed at a particular time in either view, zoom and rotate the display with multi-touch gestures, click on an AS to find its name and number of connections, search for a named node, find the AS you are connected to, and run a traceroute to a selected AS from your current location.

This is an amazing tool for showing n00bs or, for that matter, anyone, how the 'Net has evolved and just how massive and complex it really is and thus the Peer 1 "Map of the Internet" apps gets a Gearhead rating of 5 out of 5! Outstanding! ■

Gibbs knows where he is in Ventura, Calif. Locate your node to gearhead@gibbs.com and follow him on Twitter and App.net (@quistuipater) and on Facebook (quistuipater), and check out the Predictions blog at polratings.com/predictions/.

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sonicwall.com/SuperMassive9000

GADGETS

FreedomPop: Great idea that needs a better network

Keith Shaw's Cool Tools

THE SCOOP

FreedomPop Photon

by FreedomPop, about $100. Free for 500MB of data per month; with other plans ranging from $18 per month (2GB) up to $28.99 per month (4GB).

▶ **What it is:** The Photon is a hockey puck-size device similar to Mi-Fi devices by Verizon (Jetpack) and AT&T Wireless (Liberate), providing mobile workers with 4G data access for mobile devices through a Wi-Fi connection (connect your laptop, phone or tablet via Wi-Fi, then enjoy 4G data access from there). FreedomPop utilizes the Clearwire WiMax network for its WAN data, unlike 4G LTE on these other devices (the company says it will offer 4G LTE access later this year).

▶ **Why it's cool:** After you buy the device (FreedomPop also offers home broadband devices in addition to the Photon), you get 500MB of data access for free, without a requirement for a monthly data plan. With other carriers, you pay a monthly fee whether you use the device or not — with FreedomPop, if you don't use the device, you aren't stuck with the monthly fee. You can upgrade to premium offerings from FreedomPop that offer more data, but if you are just planning on doing some on-the-go Web browsing or checking email, and if you don't travel a lot, this offering is worth a look.

Another unique feature of FreedomPop is the ability for users to earn additional free data. By completing offers (signing up for other services) or referring friends and colleagues to the service (called "Freedom Friends"), users can earn 50MB of extra data per friend. The service can scan Gmail, MSN, Yahoo and AOL contacts, or you can directly invite people through their email address.

The plan also lets you share some of your extra data. Let's say you don't travel that month — you can donate 20M, 50M or 100MB of data to your friends who might need some extra that month. In addition, if you're getting close to your limit, you can request data from your friends. This social aspect of sharing data is a great idea.

For an extra $2 per month, FreedomPop can alert you if you're getting close to your data limits (Overages are charged at $0.02 per megabyte on the free plans; or $0.01 per megabyte on premium accounts). In addition, you can pay an extra $3 per month for its Protection Plus offering, which offers free modem replacement and direct access to FreedomPop technical support teams.

▶ **Some caveats:** The biggest complaint I have with the service is the network access. In my tests, the Clearwire WiMax network is much slower than the 4G LTE networks I've tried. In my first test, the Photon unit sent to me was defective and could barely access the network; a second unit could access the network, but only gave me an average of 6Mbps of download speed, and about 1.3Mbps of upload speeds. I could access the network from work in Framingham, Mass., but there was no network coverage at my home. I couldn't get a network signal in Tucson, Ariz., either, during a work trip.

▶ **Bottom line:** FreedomPop has a great idea in terms of casual 4G data access and giving users the ability to share extra data with friends/colleagues. If they can provide this service on a 4G network with greater coverage and faster speeds, it will be a lifesaver for those once-a-month mobile workers who only need "better than hotel" Internet access when they travel.

▶ **Grade ★★⯨ (out of five).**

Shaw can be reached at kshaw@nww.com. Follow him on Twitter: @shawkeith.

Parity Bits

33%

The percentage of peak downstream Internet traffic attributed to Netflix in the US.

SOURCE: SANDVINE.COM

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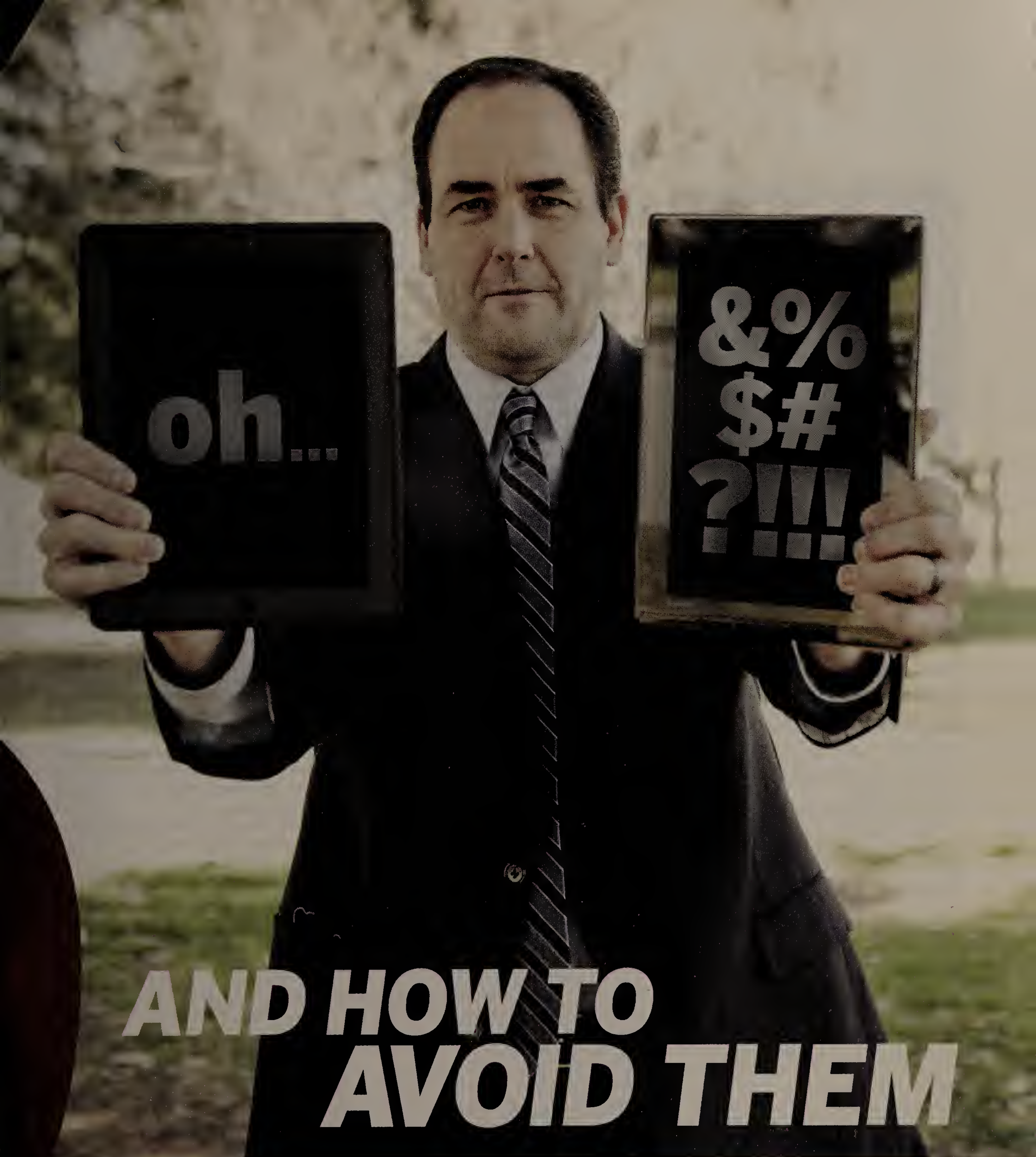
DISASTERS

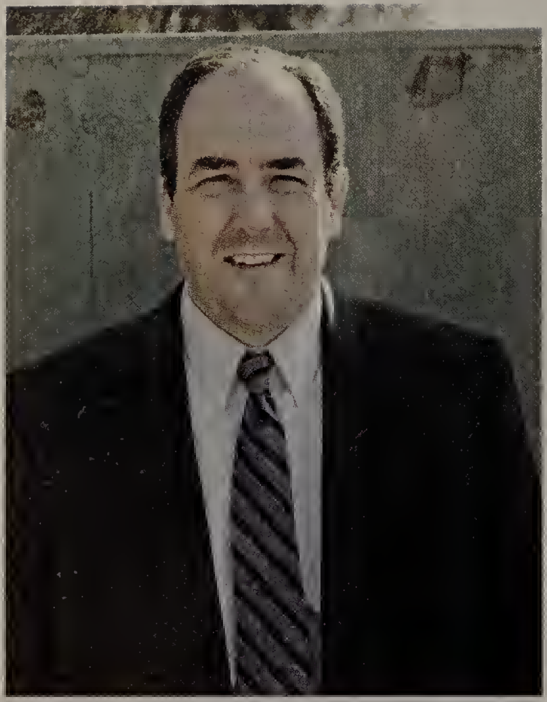
BY COLIN NEAGLE

PHOTOS BY ELIZABETH WEINBERG



AND HOW TO AVOID THEM

Imagine an organization where employees are given several consecutive months of vacation every year. It sounds like a dream, but in the era of BYOD, it could also be an IT exec's worst nightmare.



ERIK GREENWOOD, CTO of the Anaheim Union High School District (AUHSD), which consists of 21 California schools and 33,000 users with network access, says the end of summer vacation used to mean the beginning of malware season.

Faculty members would spend summer break leisurely browsing the Web, freely clicking on links, opening email attachments and only rarely updating their software, Greenwood says. As employees and their devices came back to school, they often brought viruses with them.

One virus strain forced a complete re-install and upgrade of the district's email suite. In another case, the district's IT department had to "isolate and bring down subnets to try and triangulate the virus," Greenwood says.

Each case meant his department had to work an extra "couple hundred hours, easy," he says. "There's an opportunity there that was lost where we could have been working on other projects," Greenwood says.

Greenwood turned to network access control. "We had a particular strain where our antivirus was having real challenges addressing the outbreak," Greenwood says. "And we got to the place where we saw network access control as a necessary piece of infrastructure, not only for the staff piece, but we were looking for it with the incoming students bringing their own device."

And security wasn't Greenwood's only concern. He recalls multiple cases in which rogue devices brought down the district's network. One school flat-out ran out of IP addresses to assign its devices. In another case, a rogue device on the network began acting as a DHCP server, competing with the district's actual DHCP server and distributing IP addresses of its own.

The district deployed a network access control solution from Bradford Networks and customized it to address its unique situation. The school district's network now sees traffic from more than 12,000 of its own devices, from PCs to printers, and needs to accommodate a fluctuating number and variety of devices brought from outside.

Greenwood says the initiative began at the application layer, and later evolved to include communications apps. The project involved setting policies and restrictions on who can access the network with what devices, what types of content users are allowed to view, and so on. In an ever-changing mobile market with new applications and content delivery formats, Greenwood says he prefers to begin with tighter regulations and expand them to accommodate user needs as they arise.

"As we continue to grow, we have all of these systems that are competing for bandwidth," Greenwood says. "And that's kind of been the thread, trying to grow our network, and that continues to be the challenge."

Lost and found

Greenwood is hardly the only witness to the problems that can arise as a result of BYOD. Endre Walls, CTO of nonprofit Resources for Human Development (RHD), says employees who lost their personal smartphones, which they had secretly synched with their corporate accounts, posed a major data loss risk.

"Lost devices were a security issue for us, because if the user has our email prior to the implementation of our MDM and our policy, we were out in the wind," Walls says. "That was always a huge issue for us. A lot of times, the user needed to be able to put two and two together to know, 'OK, I lost the device, and this is a potential problem for the organization.'"

But few employees who had lost their personal smartphones ever thought to inform the IT department about it, even if that device had been synched with corporate apps. And the chances that these employees had taken it upon themselves to implement authentication on their personal devices were slim, "because there was no policy there [that] was anything saying 'you have to have a PIN on your phone,'" Walls says.

"Before the software and related policies were put in place, you could be talking about days before we even know anything happened," Walls says.

RHD now has the ability to wipe its corporate data and apps from an employee's personal device, and even offers a complete data wipe if an employee requests it. Just as importantly, the IT department makes all employees aware that any device that has been synched with corporate apps — no matter who it belongs to — needs to be secured if it's been lost.

However, employees don't even need to lose their device to accidentally leak sensitive corporate data. Ojas Rege, vice president of strategy at MDM vendor MobileIron, says many consumer devices are optimized for opening, viewing and saving documents in the cloud. This poses a risk that consumers may never consider.

"The No. 1 source of data loss on the iPad was email attachments," Rege says. "So, traditionally, when you're using email [in iOS] and you click on an email and there's an attachment and you click on that, it gives you this menu to open [the document] in all of the readers that you have on the device. So if you click on Dropbox, your corporate data is gone. Every email attachment is one click from the cloud on that device."

Naturally, these problems are enough to send any IT administrator rushing to deploy any mobile device management, network access control or mobile data protection software on the market. But deploying the software involves building a strategy, and that can be risky as well.

Legal issues

Legal concerns should be a top priority for any company considering launching a new BYOD program, says Ann Marie Cullen, MobileIron's customer advisory services manager. Cullen works directly with MobileIron customers while they plan and launch their mobile initiatives.

"One of the biggest mistakes that we see

> **“THE NO. 1 SOURCE OF DATA LOSS ON THE IPAD WAS EMAIL ATTACHMENTS.”**
>
> **OJAS REGE,** VICE PRESIDENT OF STRATEGY AT MDM VENDOR MOBILEIRON

customers commonly make is not involving the right stakeholders up front when developing their programs,” Cullen says. “So they have to go outside of IT and involve legal, HR, and finance and compliance in developing their programs.”

In one case, Cullen saw an IT department put in the time and work developing a strategy just to have the legal department shut it down just before it was deployed.

“It puts too much liability on the company, and so they had to basically go back to the drawing board again and do it with legal involved,” she says.

As frustrating as that may be, that IT department is lucky the legal team intervened. A 2012 *USA Today* report found that the number of lawsuits alleging wage-and-hour violations grew 32% from 2008 to 2012. Employees who had sudden access to work information and apps on their personal smartphones were pressured to work additional hours while at home, and filed suit because they were never compensated. One case, involving pharmaceutical sales representatives, reached the Supreme Court last year.

Privacy becomes an issue as well. Any GPS monitoring apps, particularly when used to track an employee, can be dangerous from a legal standpoint. And even businesses that respect their employees’ privacy need to make that clear, Rege says.

“The users do get worried about ‘well, is IT going to see my photos, is IT going to read my SMS messages,’” Rege says. “Some of these things aren’t even technically possible. But it’s not a technical question; it’s a question of the relationship between the two.”

Another, more technologically justified concern is the extent of the employer’s remote data wipe capabilities. A common solution to the threat of lost devices is to employ a remote wipe tool that allows the organization to delete all data off a device an employee has misplaced. That worked fine in the days of the corporate-owned BlackBerry, but it has caused some real-world problems for those using their personal phones.

While on a family vacation last year, Mimecast CEO Peter Bauer’s 5-year-old daughter got ahold of his iPhone, which he had been using to both check in at work and take photos on the trip. After his daughter accidentally entered the wrong PIN number five times consecutively, the MDM program Bauer himself had approved automatically wiped all data on the device, photos and all.

Although many IT departments prefer a partial wipe, which provides the ability to delete only corporate data, Bauer says the company decided on a full wipe because employees often took photos to save information written on whiteboards or projected on-screen during presentations. In that case, a partial wipe was likely to leave sensitive information on a lost device.

Bauer’s case is a unique one, but it speaks to the importance of communication when crafting a BYOD initiative. Every business is different, and will need to address mobility in its own way. Especially when dealing with employees’ personal property, communication and feedback are essential to a successful rollout. When addressing BYOD, the IT department can’t be afraid to adjust its role in the organization, Rege says.

“Suddenly saying ‘I’m going to give users more freedom, I’m going to focus on education and communication,’ it doesn’t come naturally for all IT departments,” he says. “I know that we have seen some IT departments struggle because they just don’t know where to draw the line and where not to draw the line. They just grew up in a world where that line was kind of clear.”

Indeed, RHD’s Walls says the BYOD initiative was an opportunity for his IT department to work across the organization in a way he never has before. A mutual relationship with IT, which may not have existed in the pre-BYOD world, is imperative to keeping other parts of an organization from suffering the unintended consequences of the mobile workforce.

“That’s why awareness, user training, communication is so important. I can’t stress that enough,” Walls says. “This is the first opportunity professionally that I’ve had to implement that kind of strategy, and I think it’s way more effective than anything else that I’ve tried in any other environment.” ■

Best BYOD deployments

DON’T DO IT WITH JUST COST IN MIND. BYOD doesn’t usually save money; it makes employees more productive.

COMMUNICATE. The IT department needs to make the policy clear to the users, and must be willing to step out of its comfort zone to do so.

ARE INVISIBLE. If the policy interferes with users’ personal data or experience, they’re not likely to follow it.

START SMALL. It’s easier to start with tight restrictions and expand as needed than it is to grant users freedom only to take it away later.

RESPECT EMPLOYEE PRIVACY. This goes for monitoring, access to data, and expectations for reasonable working hours.

LENOVO THINKSERVER

Lenovo ThinkServer: Fast, versatile

Lenovo 2U server sports 12 CPU cores and tons of storage

BY TOM HENDERSON

We tested the Lenovo ThinkServer RD630 in our network operations center cabinet at nFrame in Carmel, Ind., and found that it fits the bill if you're looking for a powerful, versatile 1/2U server.

The biggest limitation, we found, is that the standard sample we were sent has just two or three (depending on configuration options chosen) Gigabit Ethernet ports, which may limit its usefulness in high-traffic environments.

The basic kit includes the server, rack rails, power cord, and DVDs with software and guides. The rack rails looked a little flimsy, but surprisingly they installed in seconds — snap snap, repeat. The instructions said to use two people to attach the server, but one of us, the gutsy one, lifted the RD630 perilously onto the extended rails, went snap snap, repeat, and the 2U server unit was attached, and ready to slam back into the cabinet.

There were the usual dual power supply connections. There were three Ethernet jacks to connect, one of which can be used for the ThinkServer management components. We fired it up, and wondered if there should be a warning for excess noise. The ThinkServer, like the HP and the old Apple Xserve we use, would be at home at an international airport. Like the HP, however, you can turn down the fans if you're so disposed.

The ThinkServer comes with two DVDs: one RAID Configuration Tool, and the other Documentation. There's room on the face of the RD630 for a DVD drive and our unit came with one; finding a DVD drive is unusual in 1U and 2U servers so we were happy with having one for boot options. We could also use Intel's PXE Boot to bring up the server, but having a DVD drive was a joy.

On the RD630's front face are eight slots for 2.5-inch SATA or SAS drives. We liked the VGA jacks on the front and back, but there are only three Gigabit Ethernet jacks, and one of these is likely to be used for management backplane access, leaving just two Gigabit Ethernet connections for the server and any VM guests or Web processes on the machine. We'd like to see more — and even 10G Ethernet jacks. There's plenty of musculature in the Lenovo RD630 and it's a shame to be weakly connected.

CLEAR CHOICE TEST

However, those desiring more or faster (think 10G Ethernet) connectivity have the ability to use up to five PCI Express card slots on the two risers built inside the server. However, be aware that the PCI Express bus will throttle lots of network cards because of its own bus speed limitations. Were we to order additional Ethernet cards, we'd ask for a TCP offload engine (TOE) card or otherwise intelligent Ethernet cards that have onboard processors so as not to slow down first the PCI bus, but also to prevent constant processor interruptions.

Then there are the stunning six USB connections on the RD630. Some might consider this overkill, but when jostling external flash/conventional drives, a keyboard and mouse sitting on a crash cart in a freezing NOC, more jacks are better. The RD630 can be easily connected front and backside to the aforementioned crash cart.

The ThinkServer includes an app that controls the RAID controller, which is based on a PCI-bus to controller disk management. Lenovo sent us SAS drives, but also supported are SATA II, as well as several varieties of SSD drives, and certain advanced SSD features (like CacheCade).

The MegaRAID utility is similar to that seen on Dell, IBM and other servers, and explains setup, RAID types, implications of choices, and how the RAID controller can be accessed, and drives evaluated through the RD630's management channel. The manual for the software is almost 300 pages long, and is thorough in its explanations.

NETRESULTS

Product	**Lenovo ThinkServer RD630**
Price	$4,519 as tested
URL	www.lenovo.com/products/us/server/rd630.html
Pros	Compact 2U performer; great RAID software
Cons	Just three Gigabit Ethernet jacks; supplied docs missing pages

It's possible to configure the RAID array in any number of ways from RAID 0 to "60," but we chose RAID 6. The ThinkServer software can then be used to prep the array for varying operating systems. We chose to install VMware, then we wiped that and tried Windows Server 2012, wiped that, and in a fit of boredom, installed Canonical's Ubuntu Server 12.04 base, then some additional VMs.

The reason for the pleasant boredom is that the Intel Reference chipset is a known quantity, so hardware probing during operating systems initial installation reveals a very generic chipset, and one that allows the operating systems routines to choose the right device drivers the first time. This might be one of the main reasons we'd choose this server: no hardware surprises for driver choice routines.

As we expected, with 12 CPU cores, the RD630 is very fast. It uses two Intel Xeon E5-2620 95-watt, six-core CPUs. Power consumption is moderate, and power settings are comparatively limited in BIOS configurations.

An additional problem, not one that's Lenovo's or Intel's fault, is that most hypervisors, including Hyper-V and ESXi, will thwart hosted VM settings, and so the CPUs will run at full clock speed, and therefore, unbridled in power consumption depending on workload. Most hypervisors, we've found, will maximize power consumption.

The otherwise outstanding documentation, a huge PDF file, is found on the Documentation DVD. The DVD is meant to be played on Windows systems, but we found its HTML origin and successfully navigated with other operating systems. The PDF file, however, has gaping holes in it, and so we suggest potential RD630 admins download a copy from the Lenovo site. The holes amount to missing pages, often dozens of them in a row. The online version, however, is complete, and also has enough information regarding configuring storage that people with moderate hardware experience should have little difficulty in getting a basic system set up.

As noted, we thought the rails hardware was flimsy, but the server was running merrily along with several pulls to get to the chassis for examinations. The server chassis is reasonable, and jacks aren't difficult to get to. We would have liked to have seen more — and perhaps 10G Ethernet jacks as well. It's a fast server, and can breathe hard, but it's not super-connected via its Ethernet ports. ■

Henderson is principal researcher for ExtremeLabs, of Bloomington, Ind. He can be reached at kitchen-sink@extremelabs.com.

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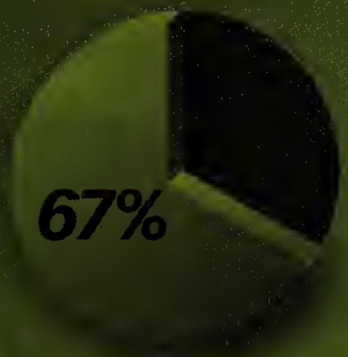

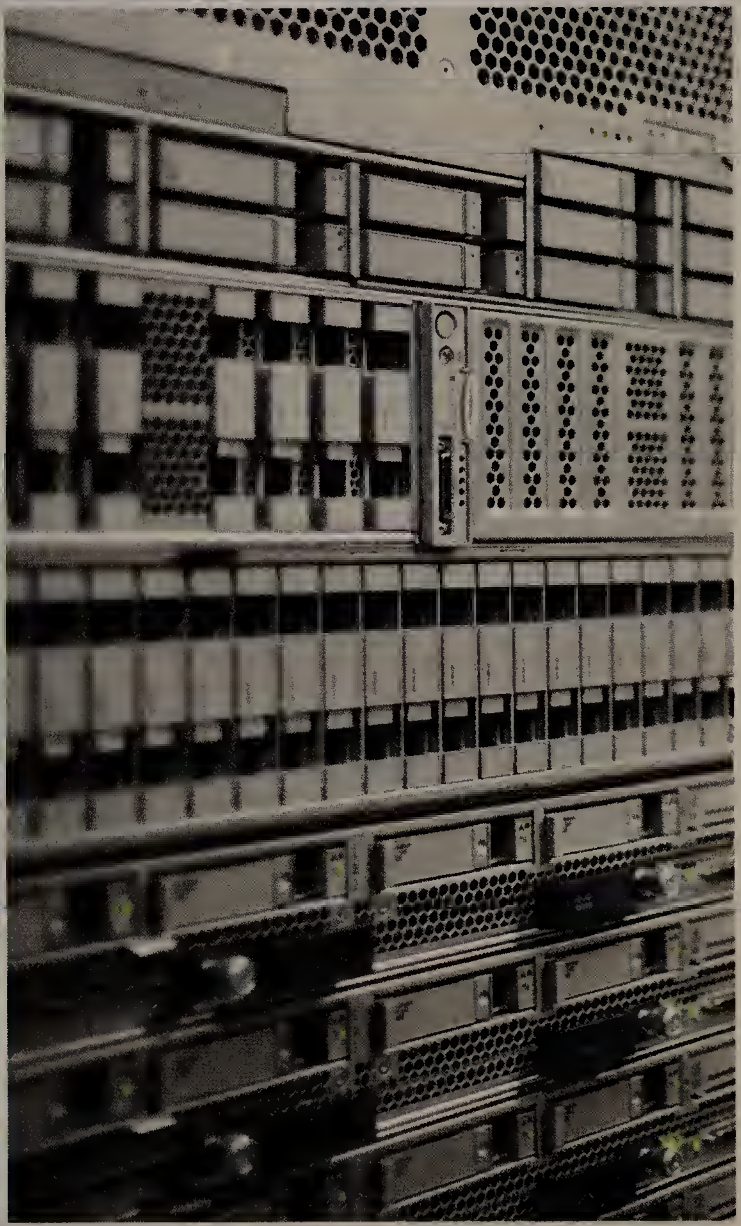

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CLEAR CHOICE TEST: BUSINESS TABLETS

Building the perfect Franken-tablet

Toshiba Exite edges Microsoft Surface RT in test of five flawed tablets

BY TOM HENDERSON AND MATT EVANGELISTA, EXTREMELABS INC.

Finding the right business tablet can be a daunting task. Do you want a 7-inch display or a 10-inch? Built-in keyboard? Snap-on keyboard? Which operating system? What apps? How about ruggedness, style, battery life, price?

We tested a sampling of five business tablets, or perhaps we should say: four business tablets and the iPad Mini. Prices ranged from $429 for the iPad Mini to $2,000 for the ruggedized GammaTech. Each device had a different operating system, and, even more importantly, a different app ecosystem.

None of the products were perfect, but in our testing, the Toshiba Excite 10 came out on top because it has solid features, but also because it isn't deficient in important ways. It draws on a huge application profile set that we believe pushes it past the competition — by a hair.

The Android Market, Google Play and Amazon Store, which the Toshiba draws upon, are rife with a myriad of business-focused applications and access methods for tablets to get VDI sessions, communications links and other business-focused applications.

We tested three 7-inch display tablets, an Apple iPad Mini, a GammaTech T7Q Durabook and a BlackBerry PlayBook 2; and two 10-inch tablets, a Microsoft Surface RT and a Toshiba Excite 10. Hands down, we liked the 10-inch displays, although the larger size is somewhat offset by its heft. We found that there wasn't a strong correlation between display size and battery size. Only GammaTech offers the option to change the battery.

If we could take the best features and build a Franken-tablet, it would have the slick feel of the Windows Surface and its optional keyboard binder. But it also would have the durability of the GammaTech unit so we could drop it, or not feel in fear of hurting its good looks. It would have the removable batteries of the GammaTech. It would have the brilliant display of the Toshiba Excite, but all of the Windows 7 apps of the GammaTech.

Here are the individual reviews:

Toshiba Excite

The Toshiba Excite is a lightweight device that sports a 10-inch screen and runs a version of Android. Apps open quickly and movements in and among applications are smooth.

The processor power is strong, and we found ourselves using multiple apps at once without fear that too many apps would slow down others already in progress.

One of our major complaints with the Excite 10 was that it uses a proprietary charger connector that's huge, and doesn't give tactile feedback about its correct polarity position — yes, it's a polarized, weird connector.

The Excite 10 came preloaded with Quickoffice Lite HD (an upgrade for the "Pro version" is available), LogMeIn, PrinterShare and Adobe Reader. A standard Gmail application is also included. The modules for Quickoffice included word processor, spreadsheet and a presentation app — with file browser. There are no licensing constraints for use of the Quickoffice applications. They're production applications, as opposed to the Windows Surface RT.

The Toshiba connected to our generic Bluetooth keyboard, and allowed us to get busy immediately. Wi-Fi was fast. Test times for the Sun Spider benchmark we used rated it at an average of 1918 milliseconds — definitely not as fast as the Surface RT, but in use, the differences were small.

The Excite 10 has a mini-USB jack, although it can't charge through it, HDMI-out and an SD card for rapidly removable storage use or reading camera (or other) data. There are two cameras, one of which is a 5 megapixel on the back that can shoot 1024x768, but we felt its stills and its video were both a bit grainy, if with good color. There is also a 2MP camera, which is good, but the graininess becomes more pronounced. There's a standard stereo jack included as well.

We also tested a generic portable Bluetooth keyboard with the Excite 10, and it paired immediately and performed well with no discernible lag or buffering in the apps we tried.

The Toshiba had the second-best battery life, a very nice display and reasonable Office application payload, but could also use applications outside of the normal Android channels. There is that certain freedom of choice that tips this device to lead the pack, overall.

SCORECARD

Product	Microsoft Surface RT	Toshiba Excite	iPad Mini	BlackBerry PlayBook	GammaTech Durabook
Business App Payload (25%)	2	3.5	1	2	2
Usability (25%)	4	4	3	4	3.5
Features/Ease of Use (25%)	4	4	3	2.5	3.5
Form Factor/Battery Life (25%)	4	4	4.5	3	3
Total	3.5	3.875	2.875	2.875	3

SCORING KEY > **5:** Exceptional, **4:** Very Good, **3:** Average, **2:** Below Average, **1:** Consistently Subpar

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Microsoft Surface with Windows RT

The Windows RT tablet has a number of things going for it and might have been our choice, but for its singular lack of applications. The Windows RT operating system has much in common with Windows 8, we found, but there are still some chasms between the two. Microsoft's target with the Surface seems to be Apple's iPad. There's a proprietary power connector, a vivid UI, and the Surface RT is slick.

Underneath, however, Microsoft's Surface RT suffers from a dearth of applications, and additionally, from second-class citizenship with Microsoft's other Windows products. RT applications are specifically built for it and no other — unless possibly ported to Windows 8, if the application context fits.

If you're heavily invested in Web apps, and the base of Windows Office apps is the only foundation you'll need, the Surface RT is a reasonable choice. Otherwise, it's more poised toward consumer and entertainment/media-consumption.

Bring-your-own-device (BYOD) Surface RT users are second-class citizens inside the office because Windows Surface RT doesn't offer peer authentication with Microsoft's Active Directory. This also means that Windows Active Directory group policy controls aren't in force. If the machine is to be controlled for business uses, it's through Microsoft's ActiveSync APIs.

IT execs can manage Surface RT devices through Microsoft Exchange, via mobile-device management applications or through Microsoft's subscription-based management cloud app, Windows Intune (not tested). Microsoft's System Center 2012 Configuration Manager SP1 can also provision post-purchase payloads of apps, but we didn't test this, either.

The Windows RT payload comes with Microsoft Office 2013 Preview Edition. In actuality, "Preview" means "beta," which doesn't mean production. Users will ostensibly obtain the "full edition" through Windows Update on their Surface RT. Our jaws dropped. We certainly weren't warned of the beta nature of software when we bought the system.

According to Microsoft's website, "As sold, Office Home & Student 2013 RT Preview and the final edition are not designed for commercial, nonprofit, or revenue-generating activities. However, organizations who purchase commercial use rights or have a commercial license to Office 2013 suites can use Office Home & Student 2013 RT for commercial, nonprofit, or revenue-generating activities." Unless otherwise licensed for Microsoft Office for commercial use, one cannot use the Surface RT Office Apps for the stated activities. Lacking a usable office application given these constraints, we had to demote the Surface RT from being usable in a BYOD situation — at all.

With an optional keyboard, as with the rest of the tablets we tested, you can use plentiful online versions of office apps, like Microsoft's Office 365, which is licensed differently. Inside the Microsoft application store, however, there are but a comparative handful of applications that will work on the Surface RT. And like Apple's application hegemony, unless you root the Surface in some way or provision it through alternate means with RT-specific applications (others don't work), you're captive to the apps on Microsoft's site, which, at the time of our testing, were few.

The Surface is a big 10-inch tablet, feels a bit heavy, but still feels comfortable, like the iPad we reviewed in last year's look at business-focused tablets. It's heavy to hold, but surprisingly comfortable due to the thinness and even weight distribution.

It comes with a built-in stand in the back, so watching videos does not require you to prop the machine up or hold it. The thick screen border of the Surface looks sleek, and the optional keyboard/cover attaches magnetically. There is an app that allowed handwriting-to-text conversion that worked rather well. Our hands were very active on the Surface RT and we liked how tactile we became with it, quickly.

Windows 8's user interface works great on the RT version and the Windows RT OS seems highly catered to a tablet environment. Unlike the Windows Surface 8 Pro, there is no going back to the "Start" menu, because other Windows 8 apps aren't compatible, so it has no real context on the Surface RT edition. Screen touch actions, such as swiping from window to window, swiping up from the bottom (or down from top) to bring up extra menu items, and swiping left or right to move between browser pages, all worked very smoothly. Also, this is not a "lite" version of Windows 8 — it's almost full-on Windows 8.

The Surface RT uses a five-pronged magnetic charger adapter; we judged it interesting but sometimes it didn't "snap in place" as it should. There's also a standard USB jack (that doesn't charge the unit) and a mini-HDMI output jack, as well as standard stereo headphone jacks. There were front and rear cameras, although at 1MP and "800p," the images were OK, but not as good as others we reviewed.

Microsoft's SkyDrive becomes a useful storage place for the RT's media and documents, if one is legally licensed to use the Office beta edition. We also used Skype on the Surface RT, and over a several-hour period, it performed well. It also had decent

	Overall	Type	Screen Size	Weight	Resolution	Operating System	CPU/ Processor	Memory	Storage Capacity	Battery Life (claimed/actual)
Microsoft Surface RT	3.5	Color TFT Active Matrix	10.6"	1.49 lbs	1366 x 768	Windows 8 RT	1.3GHz Nvidia Tegra 3	2GB	64GB	8 hours/ 8 hrs 22 min
Toshiba Excite	3.875	TFT Active Matrix	10.1"	1.1 lbs	1280 x 800	Android 3.2	1.2GHz Texas Instruments OMAP4430	1GB	16GB	9.5 hours/ 8 hrs 23 min
iPad Mini	2.875	IPS TFT Active Matrix	7.9"	.68 lbs	1025 x 768	iOS	Apple A6	512MB	32GB	10.5 hours/ 16 hrs 19 min
BlackBerry PlayBook	2.875	TFT Active Matrix	7"	15 oz	1024 x 600	BB Tablet OS	1GHz dual-core	1GB	16GB	7 hours/ 7 hrs 26 min
GammaTech Durabook	3	TFT Touch Sensitive	7"	2.64 lbs	1024 x 600	Windows 7	1.6 Intel Atom processor	1GB	64GB	7.5 hours/ 6 hrs 17 min

battery life and was among the fastest tablets we tested. But Surface RT comes with highly constrained Office apps — with no other real choices available, except those from the cloud.

BlackBerry PlayBook 2

We reviewed the BlackBerry PlayBook 2's predecessor, and found it reasonable, if wanting in connectivity to RIM's famous BlackBerry resources. The PlayBook 2 is better connected to RIM resources, we found, but had numerous comparative failings and some head-scratching bugs.

The PB2's 7-inch size is barely larger than a smartphone, and has a handy, if square, feel, as the edges aren't as rounded as others we reviewed. The smaller screen might be a hindrance to those wanting to watch plentiful videos, but for the quick work of checking and using applications, we found the screen vivid and clear.

Amazingly, and unlike the other tablets tested, the initial software update took around 17 minutes to complete, which we decided was annoying. Whenever there's a new device, we want to plug it in and use it.

The PB2 uses BlackBerry OS and is based on the QNX operating system. QNX doesn't run Android, iOS, or any other applications but BBOS. This means that we were captive to BlackBerry's application store, which had no apps we could identify from memory. The store is laid out in such a way as to be non-intuitive, different than other application stores we've seen. It was often difficult to discern if a listed app worked on the PB2, or another BlackBerry device. Oddly, the apps for the PB2 were all poorly rated on the RIM site, ostensibly by their users.

That said, the PB2's UI is very easy to maneuver, and running tasks can be switched to with simple swipes. Learning the UI took only seconds. Swipe actions are intuitive, and very responsive to touch and the context of the application in the foreground. The apps are easy to scroll through despite the comparatively smaller screen size. App menus and hierarchical menus were judged to be simple. The learning curve — for all but the laziest — should be short, we felt.

The built-in apps were primitive but useful. RIM includes an Adobe Reader, Docs to Go (a primitive word and spreadsheet editor), Print to Go for sending files wirelessly from your computer to your PlayBook, and Press Reader, which allows you to view/download newspaper editions from a variety of different publishers. There is a Windows (XP-8) Desktop Manager, and a version for Mac OS (6+) that allows file sync and easy movement between the PB2 and a desktop. Linux users are out of luck.

We were also out of luck when we tried to connect our generic Bluetooth keyboard to the PB2. RIM claims others work, but having a highly proprietary operating system can sometimes mean a dearth of device drivers for external products.

Media playing was also a problem, we found. The PB2 has trouble playing common video file formats, such as mp4, avi, mov and mkv. The WMV format works, however. Alternate browsers didn't work either. RIM acknowledges the problem.

From a UI perspective, the screen keyboard was more difficult to use than most, and we were tempted to stretch our thumbs in use. We also found the touchscreen to be overly sensitive. We didn't have any flies land on the screen, but if we had, they would have likely awoken it — everything else did.

The BlackBerry Bridge, which synced the PB2 to a loaner BlackBerry Bold, worked very well. It connected via Bluetooth and allowed us to sync emails, text messages, contacts and tasks easily. Curiously, you can also use the Blackberry Bold as a mouse for the PB2.

The PB2 was the slowest, by far, of the tablets tested, although its battery use was near average. It has two cameras, a 3MP facing and 5MP rear. Although there's no flash, the cameras rendered outstanding pictures and it records in full 1080p; it might be the unit's best feature.

Unless the outstanding cameras intrigue you, we can't really recommend the PB2. It suffers from a virtual desert of applications suited toward business use, like the Surface RT. If you're invested in BlackBerry infrastructure, it's worth a second look if you can find business apps beyond simple email to justify the expenditure.

Apple iPad Mini

The Apple iPad Mini is sleek, and had a jaw-droppingly stingy use of its battery, perhaps double the charged life of any of the other tablets in this comparison. It's very much like the iPad 2 we tested before. The screen was big enough to view movies or media, but slim enough so that we didn't need to stretch our fingers across

Wi-Fi	Front/Rear Camera	Ports	Accessories	Price	Upsides	Downsides
802.11a/b/g/n	1MP/1MP	USB, Micro SD, HDMI-out, audio jack	Wall outlet charger, Magnetic keyboard cover	$499.99	Nice overall design; easy to use	Gruesome licensing; comparatively few and all captive apps
802.11b/g/n	2MP/5MP	Mini-USB, Micro SD, HDMI-out, Audio jack	Wall outlet charger, mini-USB adapter	$529.99	Easy to use, good starter app payload, staggering battery life	Speed and video could be better
802.11a/b/g/n	1.2MP/5MP	Audio jack	Wall outlet charger	$429	The slickest, but no business app payload	No jacks; disorganized App Store
802.11a/b/g/n	3MP/5MP	HDMI-out, audio jack	Wall outlet charger, mini-USB cord, soft carrying case	$499	Had good sync software; BB users might like it	Slow, buggy, weak apps
802.11a/b/g/n	NA/5MP	5-pin USB, Dock on bottom, SD card, SSD expansion, VGA, Ethernet	Wall outlet charger, stylus	$2,000	Full Win7E; hard shell case built in; plentiful jacks	As sexy as a can opener; easily drained but changeable batteries

the screen in order to type on the keyboard, unlike the PB2.

There are all the well-known features of the aforementioned iPads, but also Siri over Wi-Fi.

Apple has a proprietary method of application download and access, unless one obtains an Apple Push Notification Service certificate. Otherwise, business users are captive to Apple's App Store, which we felt was arranged in a cluttered and otherwise hideous way. There are no preloaded business applications, but we could obtain a staggering variety of them from the App Store.

Apple includes a proprietary video player that doesn't have simple standard features like "repeat" or "shuffle." We had to download seven different video players before we found one that could read from the whole machine, not just the camera roll or what was easily transferable from our other systems.

The iPad Mini arrived with a USB-mini-port adapter cable that allowed us to synch to iTunes, but the iPad Mini does not get its batteries charged from this cable, only the proprietary charger cable that's included. There's a stereo audio headphone jack located on the top, but no mini-HDMI converter.

Two cameras are included, a 5MP and 1.2MP in front, but the front camera pales compared to the 5MP camera, which we judged to be good, but not stellar. Pictures are taken (acquired) quickly and were well focused; we could also record in full 1080p video mode — but had nothing native to play it back with.

The iPad Mini is handled like other Apple iPad BYOD devices. It has no native business-focused applications or jacks or armor or anything else "business." It did have an eye-popping 16 hours, 19 minutes battery life playing full 1080p videos — and no, the screen saver didn't come on. It's performance in the benchmark was comparatively weak, although nowhere as mind-numbingly slow as the PB2.

Is it for business? Not as it arrives, and you must bow to apps in the App Store, or as loaded through another authenticated source — unless the unit is jailbroken. Fortunately, it adheres to ActiveSync (useful for organizations using Microsoft Exchange) and MDM applications know iOS almost embarrassingly well these days. You probably didn't buy these for a business purpose, they were BYOD — foisted upon you.

GammaTech Durabook

In some ways, we really like the GammaTech Durabook T7Q. This is the armored version, the one for fumble fingers, the one you took to the job site, the one you played hockey with at

lunch break. Although it's a $2,000 Windows 7 Enterprise hockey puck of a tablet, it had features we liked, as well as some limitations.

You can install any payload that Windows 7 takes, subject to the limitations you'd find on a notebook. That said, it doesn't come with a business-focused software payload out of its box.

It's heavy, square, not as easily held as the others. It's thick, not sleek, and it has rubber bumpers on its corners to prevent it from becoming, as Monty Python might have said, an ex-tablet.

There is no physical keypad, only 10 function keys and six other keys for camera, num lock and so forth. The screen is touch sensitive, but picky, and we found we had to have a deliberate touch. There's an included stylus, and we recommend using it; it hides away in the unit.

The on-screen keyboard is small and we found a bit annoying to deal with — it's that deliberate touch that's needed. This is for people that pound, and we believe the Durabook could take some pounding. Our generic Bluetooth keyboard connected to it easily, and we see a bright future for generic Bluetooth keyboards as an option for the Durabook.

The OS load on the T7Q is Windows 7 Enterprise edition (full version), and it can be controlled as an authenticated Active Directory member by various Microsoft Windows policy control applications, like GPO and Viewfinity. This isn't the one you took on the airplane to read books with.

Instead, this tablet is excellent for people with occupational hazards that would still benefit from technology, such as construction work or any type of large-scale maintenance or public safety use. The platform isn't as proprietary as others in important ways. We found a regular USB 2 jack, Gigabit Ethernet, an SD reader, an SSD expansion port, a serial port and a VGA jack.

There is a single 5MP camera, rear-facing, whose still photos were very good, and image acquisition was fast. We envisioned insurance adjusters using it. The hard drive and battery unit are both rapidly field-replaceable. This is good, because the drive size was small (32GB; larger is optional) and the battery was the first to die in our tests — this is not a groomed ARM-based design that sips, rather than sucks power from its batteries. Despite that, it was the second-fastest in our benchmarks.

The Durabook is good when used for a specific purpose, to protect itself from potentially hazardous conditions. The average student, for instance, would not want to carry this around and do homework on it in the local coffee shop. The screen must be looked at directly for optimal viewing. Once our viewing angle had changed the screen became harder to see. And the on-screen keyboard would make even casual Web browsing a hassle. This is a very cool device, but best reserved for the people who actually need it. ■

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How we tested tablets

We checked each tablet for usability, business-focused application payloads and applications (where found) commonly associated with business productivity. We also tested the tablets using the SunSpider browser benchmark test as a common method among tablets to gauge performance. As a reference, our Lenovo i5-based notebooks ran about five times as fast as the best-performing tablet in this comparison, at an average execution speed of 200ms.

We tested battery life by fully charging all five tablets, then putting them into repeat play mode from the video until they dropped dead. Of the tablets tested, only the GammaTech knew where it had dropped dead, and offered to resume once we connected it to a charger — although the GammaTech had the shortest battery life of the three.

The platform we used was an 802.11g/n Wi-Fi network connected to Comcast broadband. No BYODers were hurt in the production of our tests.

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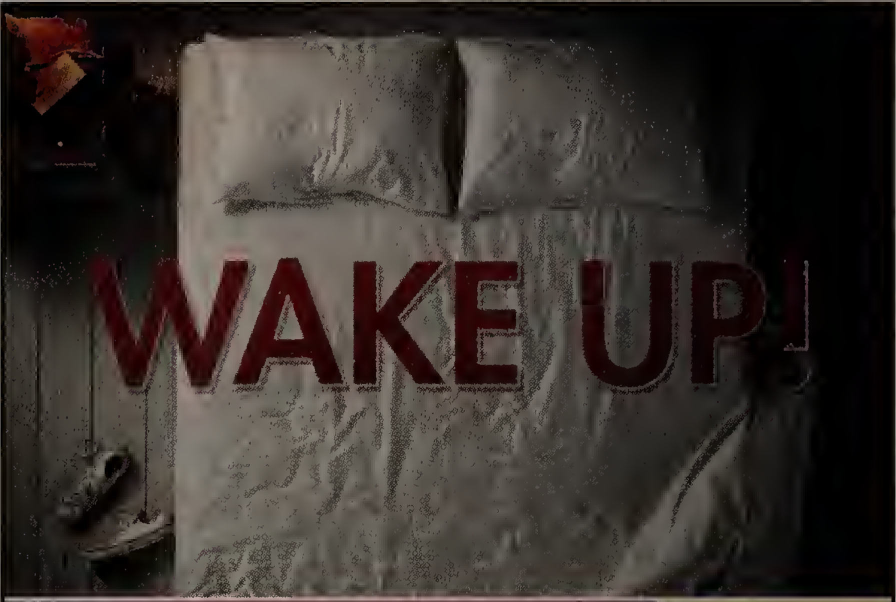

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BACKSPIN | BY MARK GIBBS

Another EU fine! Is Microsoft insane?

INSANITY, ACCORDING to Narcotics Anonymous, "is repeating the same mistakes and expecting different results." If that's true then Microsoft has apparently gone nuts.

The company's first mistake was prior to 2009 when it was found guilty by the European Commission, the European Union's executive branch, of unfairly using its dominance in the PC market.

This guilt-finding was by no means a quick process, having taken a decade of court cases and racking up both Microsoft and the EC huge legal costs in the process. The conclusion was, yes, Microsoft had been a bad boy and it was going to have to change its evil ways and start offering users a choice of Web browsers when Windows was installed.

Oh, it had to pay a fine to the tune of $1.1 billion! Ouch.

So, what did the EC just decide Microsoft is guilty of all over again? You guessed it: exactly the same thing! This time Microsoft was found guilty over the period from May 2011 to June 2012 of allowing more than 15 million Windows 7 installations to default to installing Microsoft's own Web browser.

The penalty? Another fine, this time for $729 million! By the time the company has paid these, along with other penalties incurred since 1998, Microsoft will have paid $2.2 billion in fines!

Here's the crazy thing: All of this was over something that was pretty ridiculous, given users know how to install alternatives. This means that the EU's case was really a stick to beat Microsoft with, given other charges of monopolistic behavior could have been far harder to prove.

What amazes me is Microsoft's response to the latest fine — a mea culpa if ever there was one. The company apparently has no intention to appeal and issued a statement saying, "We take full responsibility for the technical error that caused this problem and have apologized for it. We provided the Commission with a complete and candid assessment of the situation, and we have taken steps to strengthen our software development and other processes to help avoid this mistake — or anything similar — in the future."

A "mistake"?! Given the huge number of product managers at Microsoft and the legions of lawyers employed to keep the company on the straight and narrow, how do you make such a biblically stupid mistake? There had to be a requirements document, and at least one section had to cover legal issues, so it is hard to believe they missed the need to offer a choice of browsers.

Moreover, Microsoft referred to the mistake as a "technical error," which implies the installation process did include something like a browser choice section that didn't work properly. I find it very hard to believe such a thing would pass Microsoft's quality assurance process and that it was just an oversight — a "whoops, we goofed."

Could it be that Microsoft was just testing the EU regulators to see if it could get away with it? If it could have, then it could have set a precedent for future pushing of the limits of what the EU would tolerate. If that was what Microsoft was doing, wow! What an outrageously expensive mistake. Whose head will roll? And if it wasn't testing the EU regulators and it was, indeed, a technical error, whose head will roll? Either way, it sure looks like insanity. ■

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NETBUZZ | BY PAUL MCNAMARA

Some data-breach victims can't be helped

FROM THE No Good Deed Goes Unpunished Department: Security experts trying to tell a Pennsylvania hospital that a pile of its sensitive data belonging to staff — and possibly patients — was sitting exposed on the Internet were stymied for five days recently by the fact that no one at the medical facility would respond to their repeated warnings.

Moreover, says one of the experts, this kind of situation happens with alarming regularity.

"This is more commonplace than you might suspect," says a healthcare professional who volunteers for the Open Security Foundation and blogs about privacy issues under the pseudonym Dissent Doe. "I've gone through hoops trying to notify various city agencies at times, and have gotten no responses to attempts to alert a major Canadian newspaper, a major U.S. health insurer where patient info was available on the Web if you knew where to look, and a number of small businesses. And those are just the ones I can recall offhand."

In the case of the hospital, Dissent Doe and another OSF member made multiple phone calls, filled out a formal (outsourced) service desk ticket addressed to the hospital's systems administrator and technical analyst, and even sent an email to the hospital's CEO.

They got no response. (She was keeping the name of the hospital confidential out of concern that the vulnerability responsible for the data breach remained unaddressed.)

"The data were dumped on one of the ever-popular paste sites for hackers. Some appears to be from their physician directory, which is no big deal. But there are other databases dumped that contain personally identifiable info. One of the databases might be of newsletter subscribers. There are also a few names with email addresses, usernames and encrypted passwords. I don't know whether those are admin passwords to the server."

Finally she tried a back channel to get the hospital's attention.

"I did speak with a reporter local to them," she says. "My hope is that they'd take a phone call from a reporter if they won't respond to us. At least that way they'll find out they have a problem."

Contacting the local press is always an excellent idea, no matter the issue involved.

Dissent Doe also wrote about the episode on her blog:

"Every hospital tells patients that they take the privacy and security of their information seriously," she wrote. "I wouldn't believe them if they don't respond to security alerts and make people jump through hoops just to try to inform them that they may have had a breach. And I certainly wouldn't believe any hospital that doesn't even return a phone call when you have left them a message that they may have a security problem with their public-facing server."

Eventually, the local reporter managed to make contact with a hospital administrator who told him that they were already aware of the breach and had rectified it earlier.

Even if that's true, Dissent Doe notes: "That doesn't explain why they didn't have the courtesy to respond when they could see that we were trying to alert them."

General incompetence probably explains that part. ■

Have a different take? The address is buzz@nww.com.

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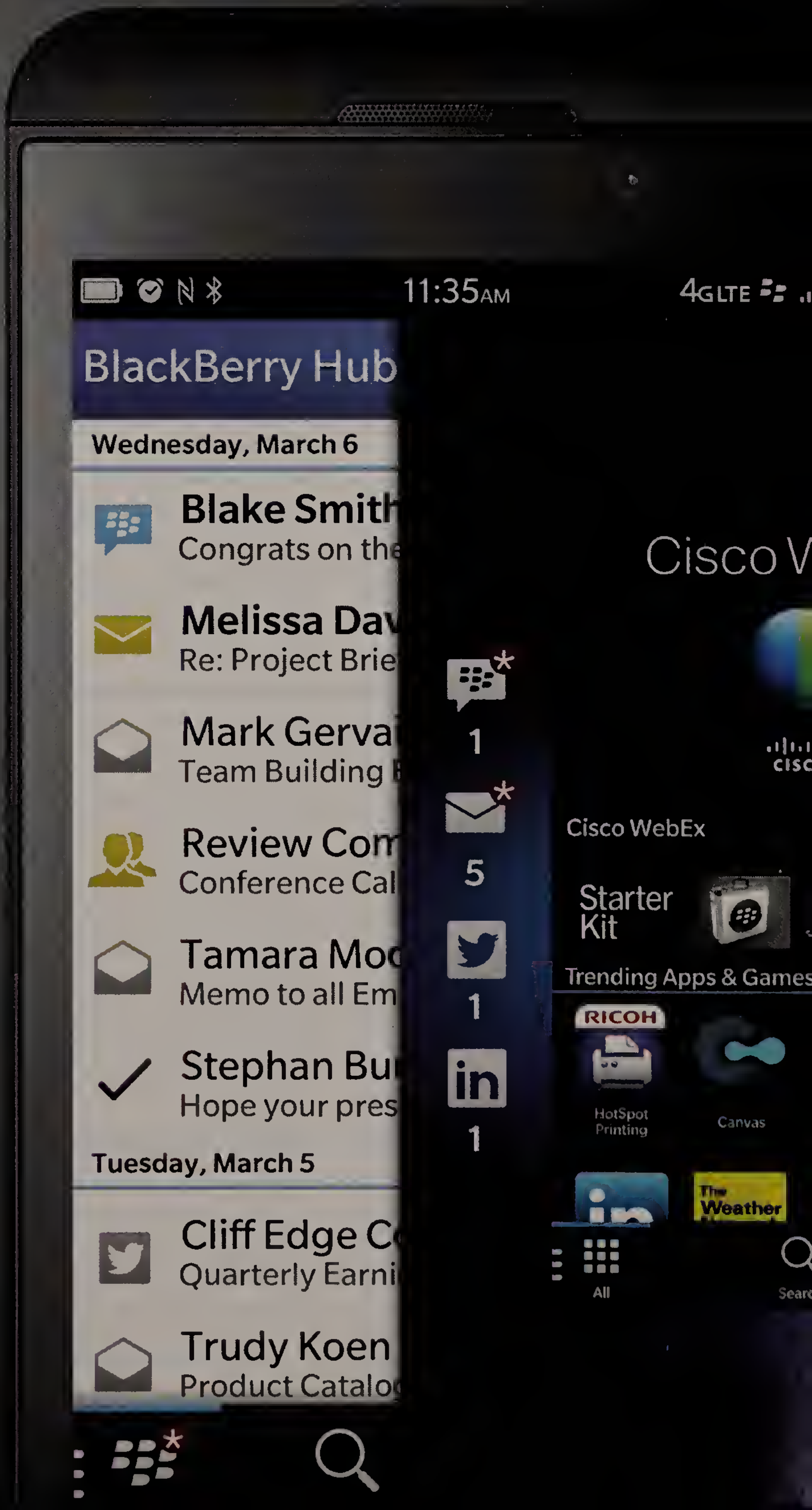

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